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To

Beth

better known, perhaps, to most
of my angling friends as
"Mama"
this book is affectionately dedicated.

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FOREWORD

SINCE the inception of our fortunate experiment at Columbia University, numerous requests have been received for transcriptions of our lecture notes used in the fifteen lectures of the extension course known as The Theory and Technique of Fresh Water Angling. While some of the material has been revised and set down in narrative form, this book, in substance, represents the gist of those lectures. In other words, it is an attempt to answer the question,

"Where can I get a book that will give me the necessary grounding in the fundamentals and, in addition, bring me up to date with modern fresh water tackle and methods?"

Both author and publisher are indebted to Doctor Edgar Burke for the color plates appearing in this volume; and to Dean Price and Peter Stackpole for the photographic illustrations. Our thanks are also due to the editors of *Field and Stream* and *Outdoor Life* for permission to include certain material which has appeared in their columns. Acknowledgment is made to Abercrombie and Fitch for permission to reproduce the plate of anglers' knots, and to George Stanley Shirk for aid in assembling data on lake temperatures. And finally our thanks are due to Martin K. Bovey for invaluable assistance in the preparation of the manuscript.

Vanilla Cupcakes with Raspberry Cream Cheese Frosting

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JOHN ALDEN KNIGHT *frontispiece*

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The Theory and Technique of FRESH WATER ANGLING

Chapter 1. INTRODUCTORY: ANGLING THEN AND NOW

THE fishing rod had been placed in the rack over my head, together with my tennis racket, and I composed myself as well as I could for the tiresome seven-hour train ride. Now and again I raised my eyes to the rack, just to be sure that the rod was riding safely. That rod, somehow, was an object of distinct resentment. It was the emblem of what seemed to be the acme of nonsense. I had, against my better judgment, accepted an invitation to spend two weeks in the woods of Northern Pennsylvania at the cabin belonging to the father of a friend of mine. Only my fondness for my friend and the prospect of two weeks of his companionship prompted me to consent to bury myself in the woods at the cabin. I had questioned him as to possible diversions: What did he do at the cabin?

"Oh, nothing much," was the answer. "There's a tennis court at Kane, but most of the time we go trout fishing."

Then I learned that the cabin had been placed in that particular spot—deep in the woods and away from towns, dances, ball games, and swimming—solely because it would be beside the stream and handy to the fishing. And how big were the trout?

"Seven, eight, and nine inches mostly. Now and then a big one a foot long."

To a bass fisherman of several years' standing, this sounded silly. But I had said I would come and now I was on the way.

One of the older boys—a friend of my chum's older brother, who also was a guest at the camp—had asked me to bring his fly rod to him. The rod had needed repair and was not ready when he had left for camp. It fell to my lot to call at the tackle shop, get the rod, carry it home, then to the station, and now it was in the rack above my head. As to its handling, his instructions had been explicit. It was an unusual rod; in fact, the only rod ever made that exactly suited his style of casting. As such, it was more greatly to be desired than fine gold, a pearl without price. I was schooled as to its care. The rod, in its cloth case, must be carried in one hand—alone, not with other bundles or packages. It must never be placed where it could be stepped on or fallen over. It must *not* be bumped into things. It must not be exposed to heat, sun, or moisture. And against theft, it must be guarded with my life if necessary. Being at the ripe age of fifteen, an age when errands of any sort are not only irksome but undignified as well, the fetching of this rod was profoundly distasteful. As I gazed at it there in the rack, it seemed the very embodiment of complete and utter futility.

My friend and the owner of the rod met me at the station. While my friend loaded my luggage into the little gas-driven car, which was equipped with flanged wheels so that it ran on the tracks of the lumber company's spur line, the rod's owner assembled the rod right there on the station platform. Not until he had assured himself that it was in first-class shape did he greet me and express his thanks for my

trouble in bringing it to him. At the time I thought this conduct a bit odd. Now, knowing trout fishermen better than I did then, I find it quite understandable.

Having unpacked my things and changed into camp clothes, I sauntered out onto the wide veranda just as George, the rod's owner, was preparing for his evening's fishing. The rod, garnished now with line and reel, rested in the rod rack on the wall. On the floor of the veranda were spread other tools of the trade. Creel, landing net, leaders, and dozen upon dozen of tiny flies were gone over and stowed in their appointed places. Preparations complete, he took the despised rod from the rack, attached a dampened leader to the line, and slipped three snelled flies through the loops of the leader. Then he strode down the grassy bank to the stream. Curious, I followed.

Directly below the camp the stream curved and swung against the bank, just where a large stump projected over the water. For the first time I saw a fly rod in action as George stripped line from the reel and worked it out through the guides, meanwhile whipping the three flies back and forth through the air. Then, with a delicacy I had not thought possible, he dropped the flies lightly on the surface of the water directly in front of the stump. There was a flash of spray, the line straightened, and the rod bent with the strain. Almost before I realized what had happened, a gloriously colored trout was flipped neatly out onto the grassy bank almost at my feet.

Slowly and without trace of excitement, the angler reeled in line as he walked to the trout lying in the grass. He knelt and extracted the hook and then turned to me.

"Take this one up to the cook," he said. "We might as well have some for supper."

Never shall I forget the miracle of nature which he placed in my hand. True, it was no great shucks of a trout—not over nine or ten inches long at most. But it had grace and color and beauty; it had symmetry and power in its delicate contours. Moreover, it had responded to a skillful performance with rod and line, had furnished the ideal foil to a fascinating bit of artistry with fragile tools. It seemed, as it lay gasping on my palm, the complete and perfect answer to all of my angling doubts and questions. Never had the sight of any living creature thrilled me as did this little brook trout, fresh caught from a mountain stream. My ideas on the rod, the cabin, and the visit underwent unqualified revision.

Hurriedly giving the trout to the cook, I followed the angler at a respectful distance. I watched his methods, his tactics, and his technique. The sound of the dinner gong was, for the first time in years, unwelcome. That evening I went into conference with my friend.

"Well, I don't know about an extra rod," he had answered. "They're awful fussy about their rods. But you can use mine—I don't fish much."

Unfortunately, George objected to being followed when he was about his favorite pastime. I suppose that in my enthusiasm over this new-found diversion I was a nuisance. At all events, he did not hesitate to tell me that he preferred to fish alone. That fellow, had he wished to do so, could have saved me much effort, trouble, and ex-

pense. As it was, I was forced to go my own way and learn trout fishing in the school of bitter and expensive experience.

My friend's brother came to the rescue on the rod question. He had a rod he would loan me, he said. After some fumbling through his duffle, he found it—a six-piece casting rod of the hollow, steel variety. When assembled, it was six feet long. With it came a reel of insignificant proportions and 100 feet of enameled line. The card on which the line was coiled was labeled "Enameled Fly Rod Line—15 pounds test." It came off the reel like a watch spring, and not until it was thoroughly soaked would it straighten out on the water. Gregory Clark has the right word: he calls them "linoleum lines."

Taking brook trout—shyest of all creatures—in a crystal-clear mountain brook with such tackle required some doing. First, it was necessary to learn to cast with that mismated outfit. Though it was clumsy at first, it could be done. As I look back on it now, that rod and line were a blessing in disguise. After some hours of practice on a platform on the breast of the dam near camp, I managed, after many difficulties, to achieve casts of from thirty-five to forty feet. Knowing nothing of the method of "shooting" the line through the guides, distance was limited to the amount of line which could be picked up from the water. With only six feet of stiff rod, the handling of forty feet of line required a nicety of timing which was difficult to learn. The slightest error, from pick-up to completed cast, resulted, with that corkscrew line, in a "bird's nest" of unbelievable complexity. As you may well imagine, that rod-and-line combination gave me a grounding in timing which has been invaluable.

Having borrowed a leader and three flies, I went fishing. I don't suppose that I shall ever forget my first brook trout. My offerings of Queen of the Waters, Brown Hackle, and Black Gnat had elicited no response as pool after pool was disturbed by my awkward efforts. However, I was learning. After a few attempts at casting within sight of a pool and seeing the trout scurry to cover under the banks, I learned stealth in my fishing. Finally, having secreted myself behind a willow bush, by some fortunate chance I managed to drop my cast lightly on the surface of the pool. There came a gratifying splash and a tug, and I struck. Nobody had told me anything of the amount of force required to hook a trout. My strike was an involuntary muscular reaction. The trout tugged at my line and, naturally, I returned tug for tug. As I recall it, the resulting strike was a yo-heave-ho affair terminating with both feet off the ground. The leader being a stout one, the trout was derricked from the pool and sailed over my shoulder, to end its flight among the branches of a tree directly over the water. There it hung, six feet in the air, threatening momentarily to wiggle itself free. Putting aside my rod, I plunged into the brook. Holding my open creel under the fish, I managed to unhook it and clap down the lid. The wetting was a minor matter when compared with the thought of losing my prize.

After the inevitable succession of inexpensive steel rods, which went the way of all cheap rods, I finally acquired a wooden rod. It was known by the trade name of Steel Vine. Reputedly fashioned from some mysterious African growth, it had, so said the man who

sold it to me, durability, strength, resiliency, and all-round excellence, beside which mere split bamboo paled into insignificance. The fact that I learned, many years later, that it was built of six-strip Tonkin cane in no way dims the glamor of the possession of this wonder rod. It cost five dollars, and that much was not easily come by when I was sixteen. It wasn't a bad rod. With it, I did great execution among the brook trout at the cabin the following year.

Trout fishing in those days was Spartan business indeed. The automobile not yet having come into its own, trout streams were reached by train, horse and buggy, bicycle, or on foot. On opening day, our favorite brook—Pleasant Stream, in the mountains of Pennsylvania—could be reached only with difficulty. We arose at 1:30 A.M. and, in company with twenty or thirty other anglers, embarked on the 2:30 train. Arriving at our destination long before daybreak, we would build a fire behind the station and try to keep warm until dawn. Ice in the backwaters and snow banks in the hollows did not stay us from "wading wet" in those chilly waters. And furthermore, we caught trout.

Our equipment was standardized. It consisted of one rod, one single-action reel, one line, one fly book, and a wicker creel. Leaders were carried dry in the fly book and moistened when needed—either in the mouth or in the stream. They were rugged, six feet long, with a loop at each end and two "dropper" loops. Through three of these loops we slipped snelled wet flies. Boots were considered unnecessary and waders were unknown. Compared with present-day equipment, outfitting for the stream was a very simple matter.

The evolution from those days of simplified equipment and methods was a long and costly affair. The purchasing of new equipment and the junking of the old was a process which was repeated too often for comfort. But each change paid dividends in trout, and that, goodness knows, was justification enough. I hate to think just how much the introduction of the dry fly cost me. It is better, I suppose, not to think about it. Just charge it up to experience and forget it.

Today, the job of outfitting is simplified for the beginner. So much has been written about trout and trout fishing that he can, if he chooses, learn all he needs to know before making his first purchase at the tackle shop. Furthermore, there are few beginners who cannot find friendly, experienced anglers who will help them to assemble their outfits.

Sometimes, as I think back over the early days of trout fishing, I can't help but marvel that we caught any trout at all by the methods we employed and with the clumsy equipment we used. Of course, our salvation lay in the fact that there were lots of trout in our streams. Remembering this, I shudder to think what would have happened to our trout had we known then what we do now of tackle and methods.

Success in angling in those days was measured in terms of the number of trout caught. Legal limits were generous—twenty-five trout of not less than six inches in length, and no restriction as to the total weight of the catch. Such a thing as returning a legal trout to the stream was unknown. You went fishing to catch fish and you brought

home what you caught. If you managed to get your limit, you came home and, exulting over your prowess, proudly displayed the catch and doled out trout to the neighbors.

Today, an angler who would bring home twenty-five small trout and boast of his ability would be labeled a fish hog and shunned by other anglers. Sportsmen are learning, slowly but wisely, that the law of supply and demand operates in their trout streams just as surely as it does with any standard commodity, be it wheat, coal, rubber, or fish. No longer can the streams produce enough trout to meet the wants of a vastly increased number of anglers. Thus it is necessary to stock and restock. Obviously, it is not possible to take from any given stream more trout than the stream itself and the Conservation Department can supply. Fishermen now think twice—at least, most of them do—before they kill their limit of fish.

Naturally enough, a beginner has some difficulty in bringing himself to return a legal fish to the stream merely because he happens to have an adequate mess in his creel. A trout just picked up in his landing net represents to him the price of considerable effort and thought. The natural atavism in the blood of every sportsman rebels against the liberation of a fish. The spirit of the chase loses some of its glory when the quarry is released. Only through education and experience can the novice learn that the fish, once taken from the water, has served its purpose. From that point on it becomes merely an item of food. The beginner must realize that every fish taken from the stream minimizes his prospective sport the next time he goes a-fishing. No longer may angling be regarded as a means of obtaining an inex-

pensive meal. More and more it is becoming a highly technical and fascinating form of outdoor diversion. Let me explain what I mean.

During the summer of 1939, I had the pleasure of doing the angling for a motion picture entitled "Brodhead Brownies." The time chosen for the filming of this picture was early June—a time at which one might expect excellent fishing in Brodhead's Creek, Pennsylvania. Unfortunately, we encountered unusually low water. The pools were shallow and glassy of surface under the bright June sun, and the trout were decidedly off the feed. Of course, by fishing the pockets in the broken-water rapids, one could take fish. That, however, would not do for photographic purposes. To make an effective picture, the trout had to be taken in the most beautiful of the Brodhead pools. It was my job to produce trout from those pools, and from a position that was suitable for the camera. It was a large order.

For four days I taxed my angling ingenuity to the utmost and managed to take sufficient fish for the purpose in hand. Martin Bovey, who was the photographer, kept a record of the scenes taken so that we would know what to "shoot" on the following day. On the last day, we found that we were shy one action scene of the taking of a reasonably large trout from a pool. The stream was lower than ever and the trout were not feeding. We decided upon the best spot from the standpoint of scenic beauty and the camera was set in place. Then it was up to me.

Using all the skill and guile I possessed, I labored mightily over that water for nearly two hours without success. I did manage to hook some small fish, but they were of such inconsiderable proportions that

they were not photographed. Bovey, who had been standing all this time in the river by his camera, grew restive and looked at his watch. He had to leave at noon.

Deciding to rest the pool and think things over, I retired to the bank and sat down for a smoke. As I tossed away the match, out of the corner of my eye I caught the telltale dimple and swirl of a feeding fish. But what a location from which to take him with a dry fly! As I watched, he rose again just at the very lip of the pool, where the water broke over an uptilted ledge of rock and fell some three feet in a miniature falls. A dry fly, cast from below, would be pulled under instantly by the tug of the falls on the line. Above, the pool was shallow, crystal clear, and unapproachable. What, then, to do?

Hurriedly dressing my line, I attached two fine leader points to increase the distance between the fly and the line and then tied on one of my own patterns—a Brown Palmer creation which had been quite dependable in the past. The fish was at least fifty feet from me, but I dared not emerge from the shadow of the bush under which I had been sitting for fear of alarming him. Without question it was a "one-cast" job, as the retrieve of line and fly from that mirror surface would undoubtedly put the fish down for good. Carefully lengthening the line, I false-cast until I was sure of the distance and then dropped the fly about six feet upstream from the spot where the fish had fed, allowing fly, leader, and line to drift away from me with the slow current. As the fly neared the lip of the falls, I saw the trout leave the bottom. Slowly he rose through the three feet of water. Just as the fly hung on the brink of the falls, he tipped up his nose,

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took the fly with almost no disturbance, and turned leisurely toward his resting station. For fear of taking the fly away from him, I dared not raise the rod tip and tighten until he was at least halfway home. Bovey was ready, and some sixty odd feet of film recorded the fight as the fish was played to net, unhooked, and released—a plump, bright fish of perhaps a little over a pound in weight. Truly, a victory if there ever was one.

Shortly after that our host appeared on the scene. All that hot morning he had been dousing wet flies in the pockets about the rocks in a piece of rough, fast water above us. He proudly displayed half a dozen small trout in his creel and seemed quite sorry for me when I reported the taking of only one decent fish. He had slipped and fallen in twice, was soaking wet with perspiration and river water, and tired to the point of exhaustion. As I look back on it, I do not believe that I would trade that one trout, taken finally under the most difficult conditions, for all the riffle trout in the river.

The older I grow, the less fun it is for me to kill. That's the nice thing about fly fishing—you can always put them back. I can ask for no more delightful combination than a June day, a beautiful river, and a difficult fish with which to match my wits and what skill I possess. Trout that are easy to take soon grow tiresome. Surely, it is possible for fishing to be *too* good.

It is pleasant to know that the rank and file of the anglers are finding out that a game fish is too valuable a thing to be caught only once. More and more the costly lesson of conservation is being learned. I do not mean that every angler is not entitled to his fair share of

trout, but eventually the beginner reaches the day when he finds his real pleasure in spending an hour or so in the taking of a difficult fish instead of leaving him and going on to the next, which may be more susceptible to his offerings. That day is graduation day. The beginner is no longer a novice fisherman. He has become an angler.

Chapter 2. SELECTING A FLY ROD

THE selection of a fly rod for a beginner is, unfortunately, usually influenced by the size of his pocketbook. Not only does he want a rod that is suitable for all-round use but he seldom desires to spend what a really serviceable rod should cost.

While there is no such thing as a rod which is perfectly suited to all methods of fishing—an all-round rod—it is possible to obtain a rod that can be thus used and that will function reasonably well in any capacity. If a man can afford only one rod, then my suggestion would be a rod that is eight and a half feet long and that weighs about four and a half ounces. Its action should be distributed more or less uniformly throughout its length, fast enough to handle a dry fly yet not too fast for comfortable wet fly and nymph fishing. He should be sure not to get a "top action" rod with a light tip and a heavy butt section. Such an action does not behave well with any length of line.

As to price, it must be remembered that the law of economics applies just as well to rod manufacture as it does to any other. While it is possible to *design* the cheaper rods so that they will function satisfactorily, the use of second grade material and "production" workmanship cannot be avoided in rods priced in the lower brackets. While no two factories employ identical methods and practices, the

general rule is that second grade wood is used in rods that retail for less than twenty-five dollars.

It is perfectly possible, if the buyer has good luck, to find rods that cost from ten to fifteen dollars which will maintain their resiliency year after year and give the same satisfaction that one might expect from a rod costing fifty dollars. This, however, is definitely the exception rather than the rule.

Recently, there has been a decided tendency away from the three-piece rods and toward the two-piece variety. In rods of eight feet or less, I prefer the two-piece but in larger rods, the three-piece is entirely satisfactory.

While many tackle salesmen are experienced anglers upon whose advice one may rely, this does not hold true of all tackle salesmen. For that reason, the beginner, when he goes to purchase a rod, will be wise to take with him a seasoned angler who knows rods and rod action. In that way he will have the benefit of advice from an impartial and practical source.

In 1935, one of my associates in business asked me to select a fly rod for him. Being in the early stages of angling, he said that he would leave the matter entirely to me.

"Just find me the best fly rod you can buy," he said. "Get one that would be entirely satisfactory for your own use. If it suits you, I know it will suit me."

His refusal to accompany me was, I believe, a wise one. Had he been with me, it would have been inevitable that he, inexperienced though he was, would have had some voice in the final decision. By

myself, it was up to me to find what, in my opinion, was the best rod available in the shops at that particular time. Thus, with *carte blanche*, I began a canvass of the tackle stores in search of the perfect fly rod.

It is not easy to select a rod for another angler. There are two decided drawbacks to the procedure. In the first place, no matter how carefully you do your job, there is always the risk that the final selection will fall short of giving full satisfaction. What suits one man completely, often, for no definable reason, falls short of meeting all the expectations of the next. Then, too, it is the lot of few men to own the *perfect* fly rod. While I have owned, from time to time, perhaps two hundred rods, only one of those approaches a degree of excellence bordering on perfection. Thus, in selecting a rod for another man, there is always the risk that you may stumble upon the long-sought rod of your dreams. It would be a horrible situation in which to find yourself.

Nevertheless, I canvassed the tackle shops and looked at fly rods. I suppose I must have looked at fifty or more. None of them suited me. There were three—all at different shops—any one of which *might* do the job. These had been set aside pending my decision. Then one day I walked into one of these shops, where the salesman, whom I had known for many years, said to me, "Say, Jack, I'm glad you dropped in. Here's one you haven't seen."

After poking around behind the counter a bit, he placed a rod case before me. I opened it and assembled the rod—a two-piece, eight-foot, brown-tone rod of about three and seven-eighths ounces. The

minute my hand closed over the grip, I knew it was *the* rod. I laid it on the counter and scratched my head in thought. "No rod," I said to myself, "can be as good as that one seems to be. No rod can have *everything*. I must be getting stale from looking at too many." I asked the salesman to let me see the others I had looked at before, just as a basis of comparison. But it was no use. The more rods I examined, the more unsatisfactory they all seemed to be when compared with the new one. So I decided to give it the third degree.

First, I inspected the reel seat. Now, a lot of people like the locking reel seats. I don't. I think they're heavy, cumbersome, and unnecessary. They add weight to a rod and give no commensurate return in improved performance. Metal reel seats reflect too much light. The same is true of hard rubber. Wooden reel seats are often difficult to adjust, because the reel ring sticks to the varnish. The only reel seat that I like on a rod is one of cork. This rod had a cork reel seat with a small, light butt cap and a reel ring not too large but large enough and loose enough to accommodate and hold any ordinary reel plate. I tried various makes of American and English reels and they all fitted. The spring of the cork held the ring tightly in place, yet the reels were easy to mount and dismount. And, once mounted, I knew they would stay there and not fall off while my friend was playing a fish—than which there are few more exasperating happenings. No, the reel seat was just right.

The grip came next. Maybe I'm a bit overfussy, but I feel that a rod grip should be made sensibly. A grip that is too small tires the hand quickly. One that is too large takes up extra space and throws

the rod out of balance. The "shaped grips" and "fitted grips" with the trick thumb rests and bulges all seem to me to be a poor job of painting the lily. I like a simple cork grip that fits comfortably in the fingers and that tapers down at the top so that you can feel each cast between the thumb and index finger. This rod had a grip like a large panatella cigar, and it fitted my hand as though it had grown there.

Next I examined each joint to see if the assembly of the strips in the sections had been done correctly. When sections are assembled for gluing, the leaf marks—the weakest part of the strips—should be staggered so that no two are directly opposite each other. Thus is the section made uniform in resiliency. Some factories assemble their sections "three and three"; in other words, three leaf marks on alternate strips are placed opposite each other. It seems to me that more uniform distribution of weakness and strength is achieved if the leaf marks are staggered. This rod had been assembled so that the leaf marks were perfectly staggered in a spiral that easily could be followed by the eye. No fault to be found there.

Next I looked at the guides. All of our good American rods are made with snake guides or "stand-up" guides of either phosphor bronze or tungsten steel. The hand guide—the large guide nearest the grip—should be of the "ring" type, either of tungsten steel or agate. The guides should be large enough to permit easy passage of the line. They should be well spaced, not far enough apart to allow undue sagging of the line and not close enough so that guide friction is unnecessarily increased. Two on the butt joint, four on the middle joint, and five on the tips for a three-piece rod; four on the butt joint and seven

on the tips for a two-piece rod is about the right allotment. The tips should be equipped with tungsten-steel tip guides. They are lighter than agate and less apt to break and damage an expensive line. This rod had guides which just suited me as to spacing, alignment, and size.

Next I looked at the ferrules. So far as I could tell, the ferrules had been "frozen" on and not pinned. Also, they were oxidized to a beautiful dull finish that would not reflect much light. The top of the female ferrule had been "hand welted"—reinforced with a beveled German-silver band which had been hard-soldered on after the ferrule had been drawn. It was also waterproofed by having a metal section hard-soldered in at the base of the well so that no moisture could reach the wood. The male ferrules had been "shouldered" to allow for a variation of only six thousandths of an inch in the diameters of the wood above and below the ferrule assembly. Both male and female ferrules were tapered where they met the wood to long, diagonal serrations of knife-blade fineness. In short, they were the last word in well-made ferrules.

The girl who wrapped that rod knew her business. The silk windings that reinforced the serrations at the ferrule bases stopped where wood and ferrule met, thus eliminating the possibility of the winding cracking open and allowing moisture to enter, as so often happens when the thread is carried down onto the wood for a short distance. So many rod makers make this mistake. Also, the guide wrappings were reinforced by five or six extra turns of thread back over the winding where the silk built up on the curve of the snake guide.

There were no useless intermediate windings and there was a small decorative "pattern" just above the winding check at the top of the grip. A beautiful job!

The varnish had not been dipped on. Instead, the rod had been given five or six well-brushed coats—enough to cover smoothly the silk windings. The final coat had been rubbed lightly with powdered pumice or talc, so that the high gloss had been removed, thus minimizing light reflections.

At the top of the grip, a tiny "hook ring" had been bound in—not on the same strip as the guides but on the next strip to the left, so that the hook would not catch in the clothing when the rod was being carried in the right hand, butt forward, as is proper.

Careful inspection of the guides revealed not a trace of varnish. There is no better way to ruin a good line than to leave varnish in the guides. The varnish soon wears down flat and the sharp edges will quickly tear the soft finish from a tapered line.

Finding no fault with the fittings or finish, I next rolled each section under my right palm to test for uniformity and to locate the "high side." Few rod sections are uniform in their diameters between the three sets of opposed sides. To locate the "high side" of a rod section, place the end of the section on the top of a table or counter and allow the other end to rest on the palm of the left hand. Then, holding the section at an angle of about forty-five degrees with the counter, place the right palm on the center of the section and exert enough pressure to bend it slightly. By rolling the bent section back and forth under the right palm, you will usually find one position in which the

section has more resistance to the pressure of your palm than in other positions. This is the "high side"—the side which has the most strength or power. By mounting the guides opposite this most powerful side, the maximum power of the rod may be utilized in casting.

The sections all proved to be nearly uniform, with merely a suggestion of a "high side" in each case, and the guides had been mounted opposite the "high side" on all three sections. Not trusting my sense of touch too much, I assembled the rod once more. Then, holding it in line with my eye, I rotated it slowly and watched the tip for variation in sag. There was none that I could see.

Next came a final inspection of the action. I don't suppose that there is any subject in this world on which there is less agreement—religion, politics, and baseball included—than you will find in the consideration of rod action. Even the definition of the word is somewhat obscure. In general, rod action might be defined as the *behavior* of a fly rod under the stresses exerted upon it by casting. When you consider that no two men cast with exactly the same motion, it naturally follows that in the hands of no two men will a rod have identical stresses placed upon it. Thus, the action of a rod in the hand of one angler will differ somewhat from the action of the same rod in the hand of a second angler. You can readily see, therefore, how difficult it is even to determine a common ground upon which two anglers *might* agree as to the action of any particular rod.

Fortunately it is not necessary to cast with a rod in order to get a general idea of its action. It is possible to get the "action picture"—the appearance of the curve of the rod when under casting stress—

while you are examining the rod in the tackle shop. For some reason, not very many men know how to do this. Frequently I have watched anglers inspect fly rods at the tackle counter—it's a fascinating performance. Usually the procedure is to take the assembled rod from the salesman and then sight along its length to see if it is straight. Next, they carefully waggle the rod. They do this with a serious expression and a knowing air. Having waggled, they go through the motions of casting a line. Following this, comes the balancing test—finding the spot above the grip where the rod will balance on the index finger. Then they waggle again, this time with the eyes shut or the head turned away. After this the rod is placed on the counter and judgment is passed upon its merits. Yet from all this they have learned absolutely nothing of definite value.

Just for fun, let's analyze these maneuvers. First, the sighting along the rod to see if it is straight. Of course, they find that it is. The last thing a rod maker will do is to let a rod which is not perfectly straight leave the factory. Only very rarely, by mistake or through lack of adequate final inspection, is a rod sent out that is not straight. It is, however, a very rare occurrence. Second, waggling. Little can be learned from waggling concerning the action of the rod. You *can* determine the *balance*—distribution of weight—in the rod by waggling it and noting where the vibrational node establishes itself. In a three-piece rod, this node should be an inch or so above the top ferrule, and in approximately the same general location in a two-piece rod. But to attempt to get the feel of the action by waggling—well, it just can't be done. Third, going through the motions of casting. This maneuver is

of little value. In the first place, the behavior of a rod without line load bears little or no relation to its behavior under actual fishing conditions. Moreover, the only visible result of making the casting motions with a rod is the behavior of the line when cast. Having no line to observe, what can be learned by make-believe casting in the store? As will be shown later, you can learn something by snapping the tip of the rod forward. But in doing this, you first must learn to do it correctly and you must watch the rod closely at the time. Fourth, the balancing test. The knowledge derived from balancing the rod on the index finger has always seemed to me to be of dubious value. In the first place, the point of balance is changed the minute a reel is placed on the rod. It is changed again when the line is placed on the reel and again when the line is strung through the guides. As there is no definite ratio of reel weight to rod weight (with the exception of the one and one-half to one ratio, which is a crude rule-of-thumb method of establishing a starting point from which the satisfactory balance eventually may be derived), each combination being made to suit the fancy of the caster, how can anything of value be learned of the rod's action from this process? Rather, the logical procedure is first to determine the rod's action and then to establish the point of balance by adjusting the weight of reel and line, depending upon the power and character of the rod. A fast, powerful dry fly rod will cast more easily with the point of balance moved back toward the grip, while a loose-actioned wet fly rod seems to feel better with the point of balance six or eight inches above the grip. It has long been my contention that the tolerance and self-control displayed by the average tackle sales-

man is something to make one marvel. My admiration of such mastery of inner thoughts, which is so complete that no trace of them shows in the external behavior, is nothing short of profound. I'm afraid that I wouldn't make a good tackle salesman.

But to return to the rod under consideration. As I said, I decided to give it the third degree. Holding the grip firmly in my hand and bracing my arm against my side, I began to wave the tip guide gently from side to side with the rod held directly before me. In doing this, I was careful not to attempt to alter the natural timing of the rod as it swung from side to side. Then I studied the curve of the rod under stress. The upper rod took only a slight curve and this curve increased gradually as the eye traveled down toward the grip. Most of the bend came between a point about six inches above the ferrule and a point about two feet above my hand. That was just about right. Handing the rod to the salesman, I asked him to repeat the process while I checked my observations from the other end of the rod. Again the curve of the rod seemed to be satisfactory.

It is impossible to say just why this type of action curve is preferable to others. All I know is this: a rod with that type of curve, minus line load, gives very good results under actual casting conditions. The rate of vibration and the general appearance of the action curve are things which must be learned through the trial-and-error method. Once learned, they will not be forgotten.

The next step was to determine the behavior of the tip with relation to casting ability. Holding the grip firmly, I executed the motion of throwing the tip into the finish of a long cast. The motion is much

the same as that made in cracking the lash of a buggy whip. The tip is snapped forward sharply, followed by an immediate checking of the lower rod. If done correctly, this motion will show you two important things about a rod. It will locate for you any faults in the taper of the middle rod and it will tell you how the rod will behave when handling a long line. If the power and resiliency of the rod is not properly distributed, the tip will snap over to an alarming degree, setting up a vibrational node which sometimes is as much as three feet from the end of the rod. Again, if the tip itself be too soft, it will bend sharply about eighteen inches from the tip guide. In either case, the rod had better be left on the counter. The reasons are as follows: In the former case, when the sharp bend occurs well down in the rod, the distribution of power is such as to cause the rod to bog down and refuse to cast a line of fifty feet or better with any degree of precision. When the bend comes about eighteen inches from the tip, you will find that a line of forty feet or more will be cast mainly by the lower rod, with the soft tip following through and doing no real work. Either type will cast a line having a decided downward "hump," so that it is difficult if not impossible to cast a reasonably straight line.

The rod under consideration had none of these faults. The tip would snap through almost as a unit. Then, when the lower rod was checked, the strain would distribute itself along the rod, so that there would be no sharp bend at any point—merely a general flexing of the whole rod, indicating the delivery of the power of the cast to the line efficiently at the point of release. It was a beautiful rod.

Giving the salesman explicit instructions concerning the holding of the rod until my friend could call for it, I returned to the office with joy in my heart and reported a job well done.

For two seasons my friend used the rod in his fishing. With it, he learned to cast quite a presentable line and I took pride in his achievement. At some inconvenience, I obtained from England a line to match the action of the rod. The combination was such that it made me most unhappy to cast with it. It was indeed beautiful. With the following spring, however, came disillusionment. I had dropped by his desk to have a chat about the coming trout season. There's always a lot to talk about before the season opens.

"Haven't thought about it much," he said. "As a matter of fact, I'm giving up fishing this year. I can get all the exercise I want playing golf and I don't have to drive so far to do it. Then, too, I'm making a serious study of bridge and we play a lot every weekend. Fishing doesn't fit in with *that* program."

My mind went back to the week I had spent in searching the tackle shops and to the joy I had experienced in finding the ideal rod. Also, I remembered overcoming the temptation to buy that rod for myself and substitute another nearly as good for his use. I asked him if he wanted to sell his rod.

"Oh, no," he answered. "I may need it sometime and it's a nice rod. I guess I'll keep it."

Depressed in spirit and with the taste of ashes in my mouth, I said good-by and went to lunch. My resentment spoiled the taste of my food. Brooding, I sat there pondering on the perversity of human

nature and making meaningless marks on the tablecloth when I was aroused by a hearty slap on the shoulder.

"Jack," a voice said. "Just the fellow I've been looking for. I wonder if you'd mind walking up to Joe's shop and helping me pick out a fly rod."

Chapter 3. FLY ROD REELS AND LINES

THE tackle salesman had been "taking down" some fly rods and replacing the joints in the proper cases. As he worked, we chatted of the current angling news. Somebody had taken a six-pound brown trout on the Brodhead the previous Saturday. Did I know anything about it? I didn't, but I wondered when somebody was going to make a good, inexpensive fly-rod reel. The salesman glanced at me, smiled, and turned to wait on a young man who had just stepped up to the counter.

"I want to get a reel," said the young man.

"What kind of a reel?" asked the salesman.

"One for a fly rod," replied the youngster.

"What kind of a fly rod? How long? How heavy?"

The young man glanced at the salesman for a moment and frowned. He was a nice-looking boy of perhaps eighteen or nineteen, tall, straight, and well dressed. He had the look of one to whom the good things of this world had come easily and who knew more about giving orders than of taking them.

"What difference does that make?" he asked. "All I want to buy is a reel—you know, something I can wind my line on and fasten to the rod," he explained, too patiently I thought. "That's what a reel's for, isn't it?"

The salesman smiled. "That's the general idea, but it still doesn't tell me very much. How much had you thought of paying for a reel?"

"I'm prepared to pay what a good reel costs," he answered.

"Well," said the salesman, still smiling, "take a look at this display case here." He indicated an array of reels under the glass counter between them. "There are reels in there—all fly rod reels—that cost anywhere from sixty-five cents to sixty-five dollars. I'd be glad to sell any one of them. But, to give you your money's worth, I should know something about your rod, so that you will get the right size and weight for it. Ask this gentleman here," indicating me with a nod of his head, "if I'm not right."

The boy looked at me. Somewhat mollified, he was still out of patience over what seemed to be a lot of fuss about a very trivial matter.

"That's right," I said. "A fly rod reel isn't just something to wind the line on. It plays an important part in your fishing. It does, of course, carry the line not actually in use. But it also balances your rod and enables you to play a fish safely and efficiently. Before buying a reel, you should know what kind of a rod is to go with it. Can't you tell us something about the rod?"

"I had no idea there was that much to it," said the boy. "The rod's out in the car. I'll go and get it."

Within a few minutes he was back, a rod case under his arm.

"It belonged to my uncle," he explained. "Dad got it when Uncle died and he gave it to me."

I took the rod from its case and laid it on the counter. No need

to glance at the maker's name on the butt cap; the rod was unmistakable.

"Do you know anything about the origin of this rod?" I asked him. "Who made it, when, and at what price?"

"No," he said, "I don't."

Before saying anything more, I put the rod together and tested its action.

"That rod," I told him, "was made by one of the six great American rod makers. Those men built these rods by hand, scorning machine methods. The man who made this rod did not make many in a year. Each rod took too long to finish for him to make very many. But each one, and I've seen perhaps fifteen or twenty of his rods—each one was a masterpiece. Not long ago I saw a man turn down ninety dollars for the mate to this rod. And you wanted to buy for it 'something you could wind the line on.' That would have been pure sacrilege."

"Gee!" he said. "I didn't know it was that good a rod. I knew Uncle was awfully fond of it, but I never knew why."

"Now," I said, "let's get back to the question of getting a reel for it, one that will be suited to the action and the weight."

Holding the rod firmly, I swung the tip back and forth. No doubt about it, that old rod maker deserved the reputation he had left behind him. The rod must have been at least forty years old, yet it was as straight as an arrow and the action, while slow, was positive and sweet and with a latent sense of power not usually found in rods of that weight. The boy watched me with interest.

"This rod," I said to him, "was made before the dry fly was used in this country. It was made for wet fly fishing. Consequently, the action is slower than most of the rods you see today. For brown trout fishing, it would not be as suitable as one of the faster dry fly rods. But for North woods fishing for 'square tail' and land-locked salmon, which is usually done with a wet fly and from a canoe, this rod will cast a line accurately and easily and will drop your flies more lightly than most of the rods in this store. It weighs about five ounces." I continued, balancing the rod on the scales on the counter to check my estimate, "I should say that a reel of about six and one-half to seven ounces would be about right."

The salesman already had taken a reel from the display case, one of English make and of approximately the weight I had mentioned. He handed it to me and I fastened it to the reel seat. Then I gave the rod back to the boy.

"See how that feels," I said.

He took the rod from me and, holding it inexpertly, tried to test the action as he had seen me do. It wasn't a very good attempt, so I interrupted his efforts.

"Not that way," I told him. "Hold the grip just in the fingers—not in the palm of the hand. Steady the grip by holding it rather firmly between your thumb and forefinger. Brace your forearm against your side. Don't hurry the rod—let it set its own timing. Now look along it as it curves and you can get the 'picture' of its action."

"But," asked the youngster, all interest now, "how can you tell if it's right or wrong?"

"That will come in time," I told him. "Just for fun, let's try a reel that is decidedly wrong." The salesman handed me one of nearly double the weight and I set it in the reel seat after removing the first one.

"Now try it," I said, handing the rod back to him. Again he tested the action, this time with better execution.

"I think I see what you mean," he said after a moment. "It doesn't feel—well, it isn't as *comfortable* as it is with the other one."

While he was perfectly serious, the salesman and I smiled. I have been trying to describe rod action and balance for years. That boy said the whole thing in just one word—"comfortable." "How did you know," he asked me, "just what reel would fit that rod?"

"There is a rule that the weight of the reel should be one and one-half times the weight of the rod. But that's just the starting point. With a slow action, the point of balance should be about six or eight inches above the grip. Like this," I said, balancing the rod and reel on my finger. "Now, a faster rod, which builds up more kinetic energy, should have the point of balance slightly closer to the hand. That means a heavier reel. Then, by trial and error, you can add a little weight or take off a little until you get it, as you say, 'comfortable.' "

"A minute ago," said the boy, "you said something about 'playing fish safely and efficiently.' Just what did you mean by that?"

"Too many men," I replied, "play a fish by stripping in the line by hand, not using the reel. That is risky business for two reasons. Sooner or later you are bound to step on your line and either weaken

it or ruin the finish. A tapered line costs good money and the accumulation of sand and grit that collects on the line when it is coiled on the floor of a boat or a canoe spoils the smooth polish of the outside covering and causes excess wear. Then, too, playing a fish by stripping is apt to cost you a good fish. With a small fish, it's safe enough because you can hold him without paying out line. But when a big fellow wants line, he takes it. If you don't let him have it, he'll smash your tackle. Not infrequently the coils of line which have been stripped in will tangle when you pay them out again. A big fish won't wait until you unsnarl your line. He'll just break things up and go on about his business.

"Some years ago, I taught a boy to fish for bass. We used fly rods and took all of our fish with streamer flies or bass bugs. In the river we fished most there was a monster bass that lived in the pool under an old covered bridge. That bass was a town character. Every year he would smash tackle right and left and continue to live in the shadow of the old bridge. He became so well known that he finally acquired a name. Everybody called him Old Bill.

"It became a ritual with us to put a fly or two over Bill each time we fished the river. No matter where we'd been, we would stop at the bridge and take turns casting over that big bass before going home. I managed to hook him twice—lightly each time, so that he threw the hook. But it gave me a chance to feel the surge of his weight and power. He was a very large fish.

"One evening we stopped at the bridge to cast over Bill a bit before going home. I went to the head of the pool while the boy took

a shot at the deep water under the bridge. He was using a White Miller at the time—a nice new one I had given him earlier in the day. For some reason, Bill rose and smashed that fly on the very first cast. He must have liked White Millers. Anyway, he took it solidly. Then he came upstream, and the boy took in line. Contrary to my instructions, he stripped the line in through the guides—about twenty-five or thirty feet of it. Then Bill jumped—it sounded like tossing a railroad tie into the pool—and immediately started down river. The boy put on all the pressure he dared and then started to pay out line. Somehow a loop of line fouled itself in a half hitch about one of his fingers. The line stopped going out and Bill went on down river with the new White Miller and half of a heavy-duty salmon leader. Now, that never could have happened if the youngster had played him from the reel.

"A lot of time, thought, and effort have gone into the making of that reel you have there. For instance, look at the convex plates on the drum. They are made that way so that the line will build up rapidly and give a larger reeling diameter, which enables you to take in line faster. Then, as the reel fills with line, the plates widen out, so that more line can be taken in with the minimum increase in the diameter of the drum. To remove the drum, just press this little lever —out comes the drum without any loose parts to lose. Anglers had to lose a lot of set-screws before that gadget was invented. Notice the way the center post is anchored—you can bang that reel pretty hard before throwing the drum out of line. The whole reel is cast and machined from tough, light alloy, to cut down weight and still

give ample strength. The spring tension is arranged against the 'click,' so that more resistance is offered when the line is being payed out than when it is being taken in. The tension can be regulated by this screw adjustment, so you can set the drag to suit the tackle you are using. In short, every single item of design and construction has been developed and perfected only after many years of experimentation by anglers who knew what it takes to make a good reel. Moreover, it's built with the same care and precision that are given a watch or any other fine machine. With reasonable care, a reel like this should last you the rest of your life."

As I talked, I had been watching the boy's face. The antagonistic expression had been replaced by the appearance of intense interest. Thoughtfully, almost respectfully, he examined the reel, turning the drum and testing the tension adjustment. Finally he spoke.

"I had no idea there was so much to know about a reel," he said. Then, smiling, he handed the reel to the salesman. "I'd like to have this one, please. Will you wrap it up for me?"

When the salesman had given him his package and change, he picked up his rod case and started for the door.

"Thanks a lot," he said. Then he turned and placed his packages on the counter again.

"I suppose," he said to me, "that getting the right line for this rod is just as important as getting the right reel. I wonder if you'd mind picking one out for me."

"Glad to," I told him. "About what did you want to pay for a line?"

"I guess the price doesn't make much difference so long as I get the right line. You said something about a tapered line a while ago. What does that mean?"

"Well," I said, "that's another bright idea that an English angler thought up some time ago. You see, by tapering the line, the force of the cast is dissipated through the taper, so that the fly will drop on the water more lightly than when cast with a line of uniform diameter.

"Some rods," I continued, "need plenty of line load to bring out the action and put them to work. That, however, is not true of your rod. Its slower, softer action would only be intensified or exaggerated by extra line load, with a resultant loss of power. Thus, it needs a reasonably light line. By way of illustration, a fast-actioned dry-fly rod of five ounces might require a line as heavy as fifty or fifty-two thousandths of an inch in diameter to put it to work. This rod, of the same weight, should not have a line much larger than forty-two or forty-three thousandths in diameter.

"But that isn't all. The kind of fishing you're going to do has a lot of bearing on the kind of a line you buy. For dry-fly fishing, you need a line that will float readily. That means a line having a low specific gravity. With this rod, which will be used mostly for wet-fly fishing, you want a line which will sink. That, of course, means a line of high specific gravity; probably one and one-half times the weight of the water it displaces."

"The color," I added, "is a matter of preference. Some prefer a dark-colored line, on the theory that it is not so alarming to the

fish. My preference is light yellow. I have never found that color seems to make much difference to the fish, and the yellow line is easy to see, so that you can locate your fly."

The salesman had placed three lines on the counter—one English and two American.

"These three lines," I said, "represent the extremes in weight per foot, all having roughly the same diameter. This one, for example, has a hollow core, much like a garden hose. Its specific gravity is point eight five; in other words, it is only eighty-five one-hundredths as heavy as the same *volume* of water. It will float like a piece of wood and you can't sink it. The second one is an average, all-purpose line. It has a specific gravity of about one point one seven—one and seventeen one-hundredths as heavy as its equivalent volume of water. The third has a specific gravity of about one point four eight. For the use of the wet fly exclusively, I should prefer the heavy line."

As I talked, the boy picked up one of the lines and inspected the tag which was attached to it.

"What does HEH mean?" he asked.

"That," I replied, "is a convenient way the line manufacturers have developed to avoid committing themselves on line diameters. In theory, HEH means that the line is tapered from twenty-five thousandths of an inch to forty thousandths of an inch. The taper itself is usually about twelve feet in all, with perhaps one and a half or two feet of level line at the end. When a line is made at the factory, it first is braided from strands of silk thread. Next it is given a coat of line dressing and allowed to dry. This coat is followed by other coats

until the silk braiding has a thorough protective covering of line dressing known as 'finish.' Next the line is polished, sometimes by machine, sometimes by hand-rubbing with very fine steel wool. Then it is measured and graded as to size. You can see that, with these several steps in the process of manufacture, it is fairly difficult to finish lines to an exact diameter. They are bound to vary somewhat. The usual practice is to allow an error tolerance of from two to three thousandths of an inch from a given size, one way or another. Thus, size E is apt to be anything from thirty-seven thousandths to forty-three thousandths of an inch in diameter. When buying a line, the only safe way to be sure you get what you want is to measure the diameter with a micrometer. Then you know what you're getting."

Just then the salesman spoke up.

"Will you want some backing also?"

"Backing," said the boy, "what's that?"

"Backing," I told him, "is the same thing to fishing that a parachute is to flying. You don't need it very often, but when you do, there's no substitute. Briefly, it consists of about fifty yards of fine-linen or braided-silk line which is wound on the reel drum under the casting line. The reel is built so that it will take this extra line comfortably, and it allows you an extra hundred and fifty feet of line in playing a large fish.

"The most convenient method of fastening a double-tapered line to the backing is this way. Splice a large loop on the end of the backing, say six inches long. Next, splice a small loop of not more than half an inch over all on one end of the casting line. Then pass

the loop of the backing *through* the loop of the casting line and slip the coil of casting line through the loop of the backing, which has been made large for just this purpose. It works the same as fastening a snelled fly to the loop of a leader. When you want to reverse the line, all you have to do is to unhitch the loops and you don't need to resplice."

The boy grinned his appreciation.

"Say," he said, "that's a pretty slick idea. How do you go about making the splice on the loops?"

"Easy," I replied. "Just tease out or unravel about half an inch of the braid at the end of the line so that you will get a smooth joint. Then bind in the loop with silk thread and soak the splice with varnish or lacquer. It doesn't take long."

"I'd be glad to splice in the loop for you," said the salesman. "Then I'll put the backing and casting line on the reel and mail it to you by parcel post tonight. That will get it to you tomorrow, if that's soon enough."

"Swell," said the boy, handing the salesman his card. He turned to me, holding out his hand.

"Thanks again for all your help," he said. Then, as an afterthought, "Won't those old duffers at the club sit up and take notice when they see *this* outfit!"

Chapter 4. CLOTHES AND EQUIPMENT

WE were seated on the bank of the lower Beaverkill River in New York State's Catskills. The day was warm, and we had built a small fire down wind from us and were resting in the welcome shade while waiting for the coffee to boil. Our investigation of the contents of the lunch basket was interrupted by the arrival of a third angler. He came, unannounced, wading through the shallows near the bank. He walked slowly, almost cautiously, with bowed head and a disconsolate droop to his shoulders. We had ample opportunity to look him over before he spied us. There were two things—three, really—about him which caught the eye immediately. Everything he had on was obviously brand new and each item, unmistakably, came from a store of the "sport shoppe" variety. He carried a rod which had been broken off cleanly just above the top ferrule, and, last but by no means least, he was dripping wet from head to foot.

Seeing us on the bank, he stopped and regarded us mournfully. My friend was the first to speak.

"Howdy," he said. "Looks like you've had some trouble."

"Trouble," he answered. "I'll say I had some trouble. How in the world do they expect a fellow to stand up on slippery rocks when he's wearing these damn boots? Why, a few minutes ago I was just standing there and my feet flew out like this." He made a sweeping

motion with his arms to show us just how his feet had flown out. The gesture was his undoing. Out went the feet again, and down he went on his back in the shallow water. We rushed down the bank and helped him to his feet. The second fall had put the finishing touches to his rod, which now was broken off just above the grip. Scrambling up the bank, he tossed the wrecked rod aside, removed his jacket, and began wringing out the sleeves.

"See what I mean?" he said. "And they told me this trout fishing was fun."

"It is fun after you learn the game," I told him. "Take those wet clothes off and let them dry in the sun while you have a bite of lunch and a cup of hot coffee. Then you'll feel better."

"Thanks," he said, almost smiling. "That sounds like a swell idea."

Draped in an auto robe, he told us his history as a trout fisherman while the three of us ate sandwiches and drank coffee. This was his first fishing trip. He had bought a complete outfit. They had told him the boots were the things to wear. And here he was, soaking wet, his rod broken beyond repair, and not a trout to show for it.

"If you have trouble standing up in boots, why don't you wear creepers?" my friend asked him.

"Creepers?" he replied. "What are they?"

"Chain arrangements that fit over the soles of your boots. They keep you from slipping. My son uses them, and I think there's a pair in the car. Wait till I get them."

Our guest regarded the creepers with interest.

"They didn't tell me about these," he said. "Will they really keep you from slipping?"

"Try 'em and see," said my friend, laughing. "You can't do any worse than you did this morning."

We munched our sandwiches in silence for a moment. Then our guest spoke up again.

"When I decided to take up trout fishing," he said, "I went to this shop where a friend of mine had arranged for me to get a discount on the things I bought. I told the clerk to fix me up with the right outfit. Somehow my things don't look like the stuff you fellows have. Mind if I look your outfits over?"

"Not at all," I answered. "Finish your lunch and then we'll go into the equipment question in earnest."

Lunch over, we packed the kit into the trunk of the car. Our guest, meanwhile, made an inventory of his clothes, which were spread on the grass and over bushes where the sun and breeze could do their work. The things which were dry, he put on. Then, wrapped in his blanket again, he joined us in a smoke in the shade at the edge of the bank.

"That hat," he said, indicating the one I was wearing. "Where did that come from?"

"This one came from England," I replied. "But you don't have to go that far for a good fishing hat. Any good sporting-goods store carries light-weight, waterproof fishing hats. I like them better than felt hats. They're cool, light, and rainproof. Felt is hot and gets pretty soggy in wet weather."

Our guest pondered on this for a moment.

"So much for the hat," he said. "Now for the coat. I notice that mine is heavy and hot."

"I'm not surprised," I replied. "It's really a hunting coat. This jacket of mine is made of lightweight poplin—finely woven cotton. It has been treated so that it is showerproof. This bellows pocket on the right just takes my big fly box. I like to carry a box which is deep enough to hold spider flies and variants without crushing them. On the other side are three pockets: a small one fairly high up to hold your scissors, and two lower down for your leader box and your box of small dry flies. I carry wet flies, nymphs, and streamers in a flat case in this patch pocket inside the right lapel, while inside the left lapel is a pocket with a zipper fastening for fly dope, stream thermometer, spare leaders, and other odds and ends. The landing net hangs from a leather thong at the back of the coat collar, where it is out of the way yet handy when needed. This pocket in the back is lined with waterproof silk and takes the place of a creel. It can be detached and cleaned after use. I usually carry a small can of line dressing in it also. My dry-fly oil is in this little bottle, which hangs on the front of my coat. That's about all you need to have with you on the stream."

"What's that old piece of leather pinned inside your coat lapel for?" he asked.

"That's not leather," I answered. "That is amadou—a highly absorbent fungus used mainly by dentists. It is handy for drying a fly after I have caught a fish."

"And what's that little glass on the front of your coat? Looks like a magnifying glass."

"That's what it is. My eyes are not as strong as they used to be, and leaders and flies are pretty small. A number eighteen dry fly under that glass looks like a bass bug, and I can thread the leader through the eye more easily with the glass than without it."

"What about pants?" he continued. "Those canvas things over there are stiff and uncomfortable."

"Well," I said, "I like to use wool when I'm fishing. These are wool whipcord breeches I have on. It costs a little more to have them made to order, but it pays dividends in comfort."

"I see," he said. "Now about this wading business. I notice that both you fellows wear waterproof wading pants and hobnailed shoes. I guess they must be better than boots or you wouldn't wear them."

"Right again," I replied. "I don't know of any kind of wading for which waders aren't better than boots. If you're careful to get a pair that fit you and that are long enough in the legs, you'll find them more suitable for all-round use. Don't get the waders with the boot feet—it's too hard to keep them dry inside. Get the stocking-foot waders and try them on right in the store when you buy them. If the legs are too short, they'll split at the crotch the first time you climb a fence, and they'll bind your legs when you walk. If they are too long, the folds in the material will soon chafe through. Better get the medium weight. They last two or three seasons and are not as cumbersome as the heavy ones. The lightweights wear out too quickly.

"There is an outfit on the West Coast that turns out the only lightweight I know about that will wear. These people make their own material. They coat each side of a piece of light cotton cloth with rubber. Then the inside is lined with another layer of cotton cloth. That sounds like a heavy piece of material, but all four layers are so thin that the material is about half the weight of that used in the average pair of waders. These waders are made to measure and cost a little more than other American makes, but they fit, they wear like iron, and they cut down weight. It's a good plan to think about weight when buying equipment.

"And one thing more," I added. "You must put waders on properly if you want to stay dry. Perspiration condenses rapidly inside your waders. If you pull on a pair of heavy wool socks over your regular socks before putting on your waders, these heavy 'condensation socks' serve a double purpose. They take up all moisture that condenses on the inside of the waders and they cushion your feet against heavy brogues and rough walking. When you take them off at the end of the day, your inner socks will be dry. Short, light wool socks between the outside of the waders and the brogues take up less water and prevent wear on the wader foot. That, too, helps keep down extra weight."

Our guest thought this over a bit. He smoked in silence for a moment or two, looking out across the sparkling waters of the Beaverkill. Then he pointed at the river.

"How in the world," he said, "do you manage to wade over those slippery rocks day after day without killing or drowning your-

self? In two hours I managed to fall flat twice. Is there a trick to keeping your feet when you're wading?"

"Not much trick if you have the right gear," I told him. "The footwear is pretty important. I like the lightweight, all-leather shoes which are built on the Munson last like an army shoe. You can pull up the laces and get the shoes tight enough to brace your feet. A small, hard box over the toes and a reinforced counter behind the heel give you all the protection you need. Some people like the felt soles for all kinds of streams, but for me the hobs seem to work better unless the rocks are clean of all moss and mud. You'll notice that the hobs in my shoes are well spaced and not too close together. Too many hobs are almost as bad as no hobs at all. They should be put in under the instep as well as on the sole and heel. Don't make the mistake of using hard steel hobs—they slip. Get the soft iron hobs, long enough so they will clinch inside the heavy sole. Then they won't pull out. Sometimes in summer, when the water is low, I use the canvas brogues with felt soles and hip-length wading stockings. By and large, however, the breast-high waders with the hobnailed brogues seem better for our Catskill and Pocono streams.

"There is one trick to wading," I continued, "that is a good one to learn. I never straighten my knees when I'm taking a step. My weight is always balanced on the foot that is secure until the other has found a firm hold on the bottom. If you wade that way, you are less apt to fall. If you use the same stride you use on dry land, you are almost sure to take a wetting before the day is over."

'Another thing," said our visitor. "What kind of a rig do you

wear on rainy days? Can you stay dry all day long in a hard rain?"

"Sure you can," I answered. "This little package holds a rain jacket which is absolutely waterproof. It is guaranteed not to leak or crack. With this, which takes up no more room in your pocket than a big handkerchief, together with high waders and your fishing hat, you can stay dry in any sort of rain."

Our guest sighed and flipped his cigarette into the river. Without comment, he rose and walked over to see if his clothes were dry enough to put on. While we assembled our gear preparatory to the afternoon's fishing, he dressed himself. While he was pulling on the despised boots, I had taken from the car a spare rod—an old one that I used mainly for lending. Taking the rod from its case, I assembled it and offered it to him. At first he refused to take it, but I insisted, so he finally agreed. Wearing my friend's creepers and carrying my rod, he said good-by with many and voluble thanks.

That evening we met at an appointed place in the village. Our guest, believe it or not, was completely dry—not a fall all afternoon. Better still, he had caught two trout, which he displayed with pardonable pride. He returned the rod and the creepers with appropriate expressions of appreciation and insisted upon celebrating the occasion with suitable refreshment at the tavern near by.

"Well," he said by way of a toast as he raised his glass, "here's to trout fishing. It's even more fun than they said it was. But just wait till I see the clerk who sold me this outfit."

Chapter 5. FLIES AND FLY BOXES

TIME was when trout flies, salmon flies, and bass flies required little discussion or description. They were tied attached to short gut snells and in conventional wet-fly patterns. No differentiation between wet fly and dry fly, streamer and nymph, was necessary. Today a fly is no longer just a fly. It may fall under one of several different categories, and the use to which it is put is just as clearly defined as is the manner in which it has been dressed.

Wet flies, as the name implies, are designed to be fished under the surface of the water. In theory, they represent the natural insect either in the process of hatching from the nymphal stage or after it has been submerged and drowned as the result of some misfortune, such as being caught in the riffles. As in the dry fly patterns, wet flies fall into two general groups: the "exact imitations" and the "fancy flies." The "exact imitation" purports to represent a particular type of insect common to the waters in which it is being fished. The "fancy fly" represents merely a submerged insect of uncertain parentage but of distinctly edible appearance—a welcome tidbit with which the fish may vary a too regular diet. Quill Gordon, March Brown, Light Cahill, and Stone are typical members of the "exact imitation" group, while Royal Coachman, Wickham's Fancy, Parmachene Belle, and Silver Doctor are good examples of "fancy flies."

The stickler for angling conventions, particularly if he is a devo-

tee of stream fishing for brown trout, usually frowns upon the use of any fly not included in the group of "exact imitations." Not only has he found that the "exact imitation," if wisely chosen and correctly presented, will be more productive than one of the "fancy flies," but also he maintains that only by scorning the use of the "fancy flies" can the angler gain the knowledge and experience which will enable him to select and use the "exact imitations" effectively. The confirmed user of the "fancy flies" is, as a rule, a man who fishes for the sport and relaxation which a day on the stream will give him. Seldom is he a student of angling. Rather, he chooses the tried and proven fancy patterns purely because he has learned that they will take sufficient fish to keep him interested and, more important, that their use requires little or no knowledge of stream insects or prevailing conditions. Those are the two extremes.

Between these two widely separated groups, there is a third and larger group. Whereas the first is typified by the technical angler and the second by the purely casual angler, the third might best be designated as the group of *average* fishermen. This group comprises beginners, those men who take their angling seriously but who have neither the opportunity nor the money to spend much time at the sport, and those who, earnest though they may be, have neither the training nor the natural ability ever to become better-than-average fishermen.

The fly kit of the average fisherman is, as a rule, a hodgepodge of every sort of fish-catching device imaginable. Being in the learning stage and consequently gullible in the extreme, he will purchase

anything which a fellow-angler or a tackle salesman tells him is a good fish-getter. After several years of such indiscriminate collecting, his kit is a hopeless conglomeration of exact imitations, fancy flies, lures, wobblers, spinners, spinning minnows, etc. By what mental process of selection or elimination the average fisherman decides upon his choice of terminal tackle for the day, God only knows. To make head or tail of his kit defies all reason.

With this in mind, it may be well to emphasize the importance of limiting the wet-fly kit to a minimum of well-selected patterns in sizes ranging from No. 10 to No. 16 for brown and rainbow trout and from No. 8 to No. 14 for native or brook trout. The reasons for this selection will, I feel sure, be made quite clear in the discussion of stream tactics and methods. For the present, it is sufficient to say that for brown trout I prefer:

Exact Imitations		*Fancy Flies*
Quill Gordon	Stone	Royal Coachman
Light and Dark Cahill	Ginger Quill	Leadwing Coachman
Hendrickson	Claret Gnat	Wickham's Fancy
Hair's Ear (Gold Ribbed)	March Brown	Greenwell's Glory

For native or brook trout, I prefer:

Professor	Mill's Number One	Flight's Fancy
Parmachene Belle	Silver Doctor	Grizzly King
Col. Fuller		Montreal

The rainbow trout, showing, as he does, a high preference for bright colors on some days and on others just as marked a liking for the drab patterns of the exact-imitation group, must be tempted with

selections from either the brown-trout or the native-trout list, depending upon circumstances.

During recent years there have come into general use several variations of the wet fly. For convenience, these variations may be divided into three classes: the bucktail, the streamer fly, and the nymph. While all are, in the strict sense, wet flies, inasmuch as they are all fished below the surface of the water, the methods employed in their use differ somewhat.

The bucktail, as distinguished from the streamer fly, was first concocted by Mr. William E. Scripture, Jr., of Rome, New York, during the summer of 1908. Using it experimentally at first, he found it to be such an effective lure for big trout that he tied a few for some of his friends. The popularity of this fly spread rapidly among the anglers of the country and bucktails are now standard items of equipment.

The Scripture bucktail is tied on a fairly large hook, usually No. 1 or No. 2, with a medium-length shank. The use of a red tag, or tail, is optional. The body, which is tied fairly bulky, is of either gold or silver tinsel, and the wing is composed of either brown or white bucktail. The wing is always tied very bushy and short enough not to extend more than a half or three-quarters of an inch beyond the bend of the hook. Scripture bucktails are not tied with mixed colors, the wing being either solid white or solid brown.

The bucktail is not, contrary to general belief, the first of the deer-hair flies. I have it on good authority that the Oneida Indians, who spent their summers at what is now Swancott's Mills, on Fish

Creek, New York, as far back as 1835, used flies tied of deer hair as *floating* lures for salmon.

In addition to the Scripture patterns, there are four other bucktail dressings which are well enough established to warrant mention.

The Emerson Hough bucktail, which has been in use nearly as long as the Scripture bucktail, is tied simply with a clipped deer-hair body and a bushy brown wing. During recent years, jungle-cock eyes have been added to this fly, but they were not included in the original pattern.

The "top and bottom" bucktail is tied as follows:

Tag or Tail—Optional, of red or yellow wool.
Body—Solid tinsel or black or red wool with tinsel rib.
Wing—Brown bucktail above the shank of the hook and white bucktail below.

The third pattern, which, so far as I know, is unnamed and may have originated with the author, is tied as follows:

Tag or Tail—Red wool.
Body—Black wool with heavy silver rib.
Wing—White bucktail with overlay of brown bucktail. Use twice as much white bucktail as brown bucktail.

Last but by no means least is the Mickey Finn. This red-and-yellow creation was first tied as one of a series of eight streamer patterns sold by Wm. Mills & Sons of New York City. For some eighteen or twenty years the Mickey Finn went its obscure way merely as Mills' red-and-yellow bucktail. In the summer of 1936, I introduced the fly to a group of anglers in Toronto, Ontario. It proved to be such

a killer that they gave it a name—The Assassin. About six weeks later they abandoned this name in favor of Mickey Finn.

This fly has been doing wonders all over the United States and Canada. It accounted for the record brook trout in the Province of Ontario for two years in succession after its introduction. Needless to say, it is a very dependable bucktail. The correct pattern is as follows:

Tail—None.
Body—Silver, ribbed with oval silver cord.
Hackle—None.
Wing—Red and yellow bucktail. The wing is built in three layers. Next to the hook shank is a narrow layer of yellow. On top of this is a layer of red, only slightly heavier. On top of the red layer is another layer of yellow about twice as heavy as the red layer. The wing should be tied so that the color bands are clearly defined and not blended.

The streamer fly, in its original form, was tied to simulate a small stream minnow. Thus it was dressed more sparsely than the bucktail and with a smaller, less obtrusive hook. It has proved, however, to be the perfect outlet for the imaginations of the fly-tiers, both amateur and professional. One of the outstanding characteristics of the amateur fly-tier is his inclination to avoid standard patterns and to concoct creations of his own devising. There being but few standard patterns of the streamer fly, the amateur tiers, with the whole gamut of color combinations to draw upon, really hauled off and did a job with the streamer flies. The result, as one might well expect, is chaos. Thus, to attempt to enumerate acceptable patterns of streamer

flies is, at the present writing, an impossibility. In selecting streamer flies for your kit, it seems better to select those which most closely suggest the small stream minnows which these flies were originally intended to imitate.

Here and there in this hodge-podge of color combinations there emerges a pattern which, through its consistent performance as a "fish-getter," has earned itself a lasting name and a standardized dressing. In selecting patterns for the color plate of streamers and bucktails, some of the more popular streamers are shown in addition to those of the old reliable bucktail patterns. Such dressings as the Black Ghost, the Gray Ghost, the two Edson Tigers, etc., are no doubt here to stay. But when one compares those few standard patterns with the legion of unlisted ones, the impossibility of bringing order out of this confusion is quite evident.

Artificial nymphs have been in general use in Great Britain for many years. Until recently, however, their use in this country was almost unknown. The reason for this is quite clear. Prior to 1933, the artificial nymphs (with a few rare exceptions) which were available at our tackle shops all originated in England, Scotland, and Ireland. These artificial nymphs, of course, were dressed to represent the larvae of the streams of the British Isles, particularly those of the chalk streams. The chalk-stream larvae, living, as they do, in the weed beds, are for the most part round of body. The larvae in our streams live among the rocks and, with the exception of the caddis and a few others, are flat in shape. Also, they are generally darker in color. Naturally, it follows that the trout of our streams were not overly im-

pressed with an artificial that did not suggest, either in color or shape, anything which they had seen before.

In the spring of 1933, two articles appeared concurrently in two of the leading outdoor magazines advocating the use of the flat-bodied artificial nymph. This was another boon for the fly-tiers. Here was another popular lure of which but few standard patterns had been developed. Within a few months every tackle shop carried in stock a supply of strange-looking confections, all of which were classed under the general heading of nymphs. I do not think that I am being unfair when I insist that 95 per cent of the artificial nymphs available today are literally not worth carrying home. This is true because of the steadfast refusal of most tiers of artificial nymphs even to attempt to suggest, through color and general conformation, the natural stream larvae. So, when purchasing nymphs, remember that the most common nymph form in our streams is from one-half to three-quarters of an inch long, flat in shape, and darker on the back than on the underside. The large majority of the May-fly and stone-fly larvae conform to this general description. Thus, in offering the fish an artificial substitute for a staple article of diet and by adhering to the most common form, you at least have the advantage of suggesting to the fish the type of nymph with which he is most familiar. Unfamiliar types tend to reduce your chances for success.

The dry fly, as the name suggests, is designed to float on the surface of the water, thus simulating the stream insect in its final stage of development. While dry-fly patterns may represent both aquatic

and land insects, the fundamental purpose of the fly is to imitate, as closely as possible, a live insect floating on the surface.

You will note by a glance at Plate #4 that there are several well-defined types of dry flies. The main subdivisions might be enumerated as follows:

Conventional Patterns

Fan Wing	Bivisibles
Spent Wing	Spiders
Hackle flies	Variants

Palmered flies (or palmer flies, as you prefer)

In order to avoid confusion, it might be as well to define these various types.

The conventional pattern is dressed in the approximate form of the adult aquatic fly as it floats on the surface of the stream: tail, body, hackles or legs, and erect wings.

The fan wing is dressed identically with the conventional pattern, except that the wing is composed of two curved, fan-shaped feathers usually taken from the breast of a duck.

The spent-wing fly has as its outstanding characteristic the wings extended at right angles to the body of the fly and in a plane at right angles to the plane of the hook.

Hackle flies are dressed entirely with hackles and with a bushy tail. Body and wings are eliminated.

Palmered flies are those which have a spiral winding of hackle throughout the entire length of the body.

Bivisibles are dressed entirely with hackles, with a short, bushy

tail. Body and wings are eliminated. They are distinguished by the presence of a few turns of hackle of contrasting color (usually white or yellow) just behind the eye of the hook. Edward R. Hewitt, who developed this fly, christened it the Bivisible because both he and the fish could see it.

Spiders are hackle flies which are dressed with a sparse wrapping of hackles that have unusually long barbules. Small hooks are used, for lightness, and spiders are frequently dressed with a short body of silver or gold tinsel.

Variants, as we have them today, are dressed much the same as spiders as to hackle. Set among the hackles are two short wings, upright, and the body may be of tinsel, quill, or peacock or ostrich harl.

There are other variations of the dry fly, such as the "fore and aft" patterns with hackle at each end of the body; flies with cork bodies; flies with extension bodies, such as the artificial May flies, and so on. These, however, are not in common enough use to warrant being listed as separate classes.

As with the wet fly, patterns of the dry fly may be classed as either "exact imitations" or "fancy flies." While there are thousands of dry-fly patterns, it is seldom necessary to carry more than a limited number of patterns in sizes ranging from No. 10 to No. 16. One Pennsylvania angler of my acquaintance carries only one pattern in his dry-fly kit—the Leadwing Coachman. This pattern he carries in sizes ranging from No. 8 to No. 22, and he always gets his fair share of trout. It has always seemed to me to be preferable to strive to cut down the number of dry-fly patterns in one's kit rather than to add

to it. As a matter of fact, practically all the usual requirements for stream fishing may be met with the following selection of dry-fly patterns, in sizes ranging from No. 10 to No. 16 where not otherwise specified.

Conventional Patterns or "Exact Imitations"

Quill Gordon — Light and Dark Cahill
Hendrickson — Ginger Quill
Olive Quill (dark—size No. 14 only)

Fancy Patterns

Fan Wing Royal Coachman (size No. 12 only)
Wickham's Fancy (sizes No. 12 and No. 14 only)
Leadwing Coachman
Brown Bivisible Spider (size No. 14 only)
Gray Spider (size No. 14 only)
Ginger Spider (size No. 14 only)
Brown Variant with gold body (size No. 14 only)

Spent Wing Patterns

Dark Olive (size No. 14 only) — Dark Cahill (size No. 12 only)
Ginger Quill (sizes Nos. 14 and 16)

These, together with a few midges tied on tiny No. 22 hooks, will serve to meet practically all of the contingencies which may arise.

There are three patterns, unlisted and unnamed, which may be included with profit in the above list. Their inclusion adds only one pattern to the list, as two of them may be substituted for two of the patterns given. The first of these patterns is a brown hackle fly with a palmered body, dressed as follows:

Tail—Cochybondhu hackle.
Body—Brown fox fur.
Hackle—Cochybondhu hackle.
Palmer—Same.

This fly may be substituted for the Wickham's Fancy in the sizes shown.

The second is a hackle fly which may be substituted for the Gray Spider. The pattern is as follows:

Tail—Black and white badger hackle barbules.
Body—Black ostrich harl.
Hackle—Black and white badger, medium-length barbules.

The third was designed for a special purpose. In fishing a stretch of broken water, dropping the fly with a short line in the pockets, about the rocks and on the short "runs," the fly will inevitably be pulled under the surface from time to time. Thus, a fly that is quite buoyant, that floats high on the surface, and that holds its shape in spite of frequent duckings manifestly is the best fly for the purpose. Seldom, while fishing pocket water, is one confronted with the necessity of matching an established hatch of drifting duns, so that one of the "fancy fly" group is suitable for this style of fishing. This third pattern was designed to meet all of these requirements and also to be somewhat better than average as a taker of fish. This is the pattern:

Tail—Barbules of brown hackle.
Body—A thick "button" of peacock harl.
Hackle—Two black hackles and two brown hackles, not blended but wrapped so that the differently colored hackles present two distinct bands of contrasting color, with the brown next to the eye of the hook. The hackle directly behind the eye of the hook is wrapped with the shiny, or top, side of the feather toward

the head of the fly. The other three hackles are reversed and wrapped with the shiny side toward the tail. Thus wrapped, the hackles are less apt to be pulled back flat along the shank of the hook when the fly is pulled under the water, and the fly tends to stay bushy and buoyant much longer than it would if the hackles were wrapped in the conventional manner.

Having more or less decided upon the matter of what flies to carry, the next question is how best to carry them. I use three boxes, one for the wet flies and two for the dry flies.

The box which contains the larger dry flies—No. 12's in the conventional patterns, variants, spiders, hackle flies, and the like—is a fairly commodious affair having dimensions of 7⅜ by 3⅞ by 1½ inches. Being made of aluminum, it is light in spite of its bulk. The interior is divided into eight compartments covered by four transparent hinged covers. Each compartment will hold, comfortably, from one to two dozen flies, depending on their size, without crushing them. This feature is extremely important in carrying such perishables as spiders and variants.

The box for the smaller dry flies is also made of aluminum. It measures 3½ by 4⅞ by 1 inches and its interior is divided into twelve compartments, each with a transparent hinged lid.

In both boxes the color arrangement is the same—dark flies at the left, gray and brown in the center, and buff at the right. By using this arrangement, the desired patterns can be located almost at once.

My wet-fly box measures 6 by 3½ by ¾ inches. The bottom of this aluminum box is equipped with the usual spring clips, seven

rows with ten clips to the row. The lid has been filled with a piece of sheepskin to which the wool is still attached. This wool, which has been clipped quite short, is far superior to the usual felt or cotton-felt pad. Flies placed in it are held securely but are easy to disengage. The wool does not readily absorb moisture, and being well ventilated, it dries quickly. This feature alone will save many flies for you, as rust is greatly minimized. I try to keep the clips filled with unused flies arranged according to color, pattern, and size. Used flies and perhaps a few each of the less frequently used patterns are kept in the sheep wool in the lid. It is surprising how many flies a box of this sort will hold without being overcrowded.

Streamer flies and bucktails are kept in the lid of the large dry-fly box, which has also been lined with sheep wool. Nymphs are stuck in the lid of the small dry-fly box, similarly equipped. Thus, by utilizing every bit of space, the addition of extra boxes to your kit becomes unnecessary.

To avoid overloading your fly boxes with extra flies of the same pattern, carry a supply kit, or "stock box," in your tackle bag and leave it in the car or at camp. As the flies are used or lost, replace them with new ones from the "stock box."

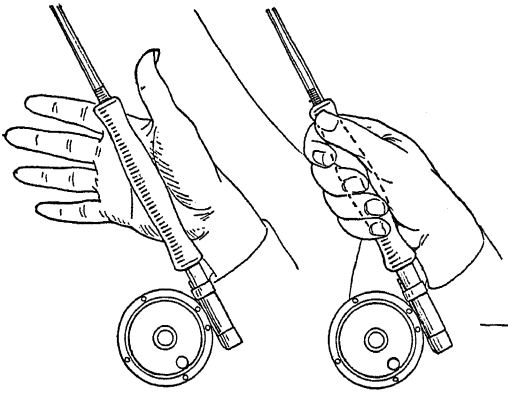
It is wise to warn yourself constantly against adding to the number of boxes and gadgets carried with you on the stream. Fishing gear is heavy enough, goodness knows, without adding to its weight by carrying needless equipment.

Chapter 6. CASTING

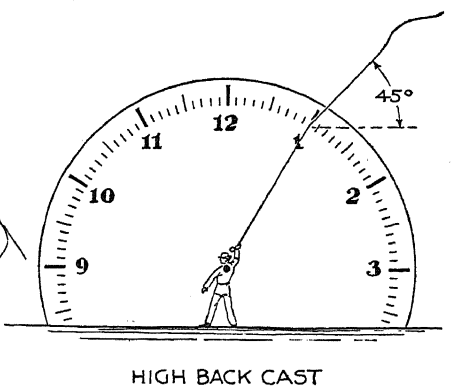
CASTING a fly with a well-balanced outfit is not nearly as difficult as many people imagine. To be sure, there are very few really fine casters. It seems strange that this should be so. To my way of thinking, the fault, or faults, in the average angler's casting lies in the fact that he is usually self-taught. Bad habits, formed early in his casting career, are driven home year after year, so that by the time he realizes just how bad a caster he really is, there is very little that can be done about it.

First off, it is important that the beginner learn to hold his rod correctly. In Plate #1, the position of the rod grip is shown with the hand opened, and also as it should be with the hand closed. You will note that the rod grip is not held against the palm. Rather, it is held with the fingers and the thumb, the heel of the hand and the base of the index finger acting as foundation points. Note also that the thumb is held at the side rather than on the top of the grip.

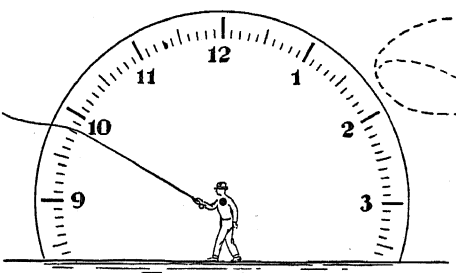
In writing this, I realize quite well that there are few anglers who will agree with me that this is the correct grip. Most of the casting instructions I have seen state that the thumb should be on top of the rod, to act as a check to the back cast. Probably the reason for this belief lies in the fact that most of the instructions for casting were written to apply mainly to wet-fly casting. Concerning the correct



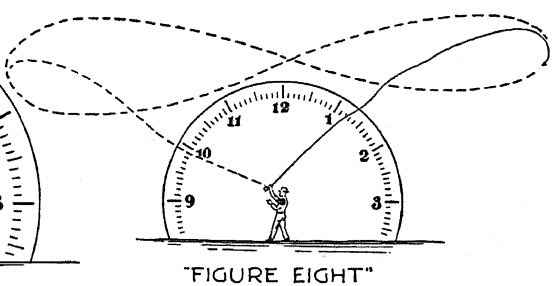
PROPER GRIP



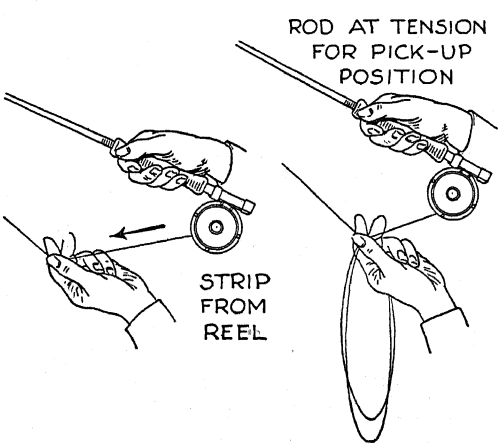
HIGH BACK CAST



FINISH OF FORWARD CAST



"FIGURE EIGHT"



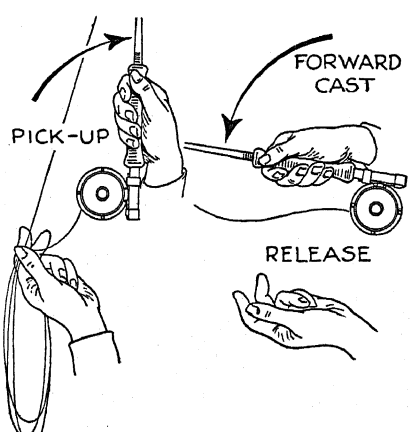


PLATE I. FLY ROD TECHNIQUE

and easy handling of the dry fly, little has been written. Thus, the beginner is usually taught wet-fly methods, which he must later on apply to the dry fly.

During an average day's angling, the dry-fly fisherman will make between five and six thousand casts. Approximately 75 per cent of these are "false casts," made for the purpose of shaking the water from the fly and the line. The other 25 per cent are made in casting the fly at a particular spot on the water. As you read this, hold some convenient object, such as a pencil, in your hand. First place your thumb on top of this improvised "rod grip" and go through the motions of casting, stopping the imaginary force of the back cast with the thumb. Note how the wrist, when held in this position, is so constricted in its action that the forearm must be brought into play in order to have the rod travel through the prescribed arc. Now hold the pencil as shown in Plate #1 and go through the motions of casting once more, this time checking the imaginary force of the back cast with the base of the index finger. You will find that the wrist bends freely in this position and that the use of the forearm is unnecessary. Surely this is the more restful position while executing the motions of casting six thousand times in one day. When using this grip, it is possible to support the rod with the thumb and the index finger, allowing the rod grip to swing away from the heel of the hand. The pendulum effect of the reel and rod grip thus is utilized to aid in the timing of the false casts as well as in checking the impulses as the rod travels to and fro. In executing the final, or "power," cast, by which the fly is placed upon the water, the grip

should be held firmly, but, while false casting, let the fingers be as relaxed as possible.

It is impossible to place too much emphasis on the high back cast. If a beginner will make it a point to school himself thoroughly in keeping his back cast well off the water, his casting troubles are pretty much at an end even before he begins. Thus, as a first lesson in casting (which, incidentally, may be done quite well on the lawn), the beginner should lay out on the grass in front of him, by hand if necessary, about twenty-five feet of line. Now, making certain that the rod grip is held correctly, it is his job to learn to pick up the line with the rod and toss it into the air behind him so that the line will extend straight out from the rod tip and at an angle of about forty-five degrees *above* the horizontal. Never mind the forward cast for the time being. He should make definitely sure that he can, not once in a while but every time, toss that line so that it carries out straight and at about forty-five degrees above an imaginary line extending back from the rod tip parallel to the lawn on which he stands.

When he has learned to do this, he has, without realizing it, learned several important things. First, of course, he has learned to toss his back cast high and straight. By watching the line unroll itself to the rear, he has learned *how long* it takes the line to straighten behind him (something that some anglers *never* learn), and thus he has mastered the most vital phase in the *timing* of his casting. In order to toss a line back as directed, it is necessary that the action of both the middle joint and the tip of the rod be utilized. Consequently, in learning the high back cast, he has learned also the feel of both the

middle joint and the tip as the cast is made. When, later, he is told to stress the action of the middle joint in making a particular cast, he will understand what is wanted. Last but by no means least, he has learned to check the impulse of the back cast at "one o'clock." (See diagram, Plate #1.)

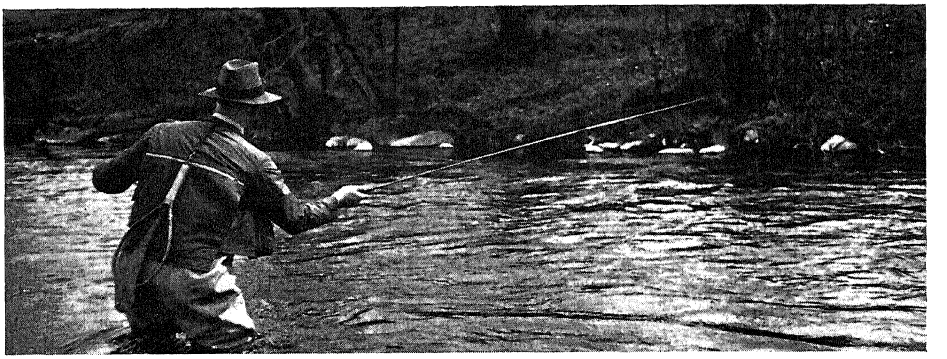
I do not think that it is wise for the beginner to attempt to have the rod travel in the vertical plane. Rather, the plane through which the rod travels should be tilted fifteen or twenty degrees away from the vertical. Few anglers, if any, fish with the rod traveling in the vertical plane. Therefore the beginner may just as well learn his casting as he will eventually use it in his fishing.

The next move is to learn to coördinate the forward cast with the back cast. By the time the beginner has learned to toss a high back cast, he must, of necessity, have learned also that the "pick-up" is an accelerated motion of the rod with a snap or flip of the upper rod at the finish. The forward cast is the same sort of accelerated motion. It starts slowly just back of the "one o'clock" position and finishes a little below "ten o'clock" with the final push or drive with the upper rod, which brings the action of the rod into play to give the line the requisite forward impulse. This can best be learned by counting, "One–two–three." "One" represents the point where the rod, having traveled through the arc of the "pick-up" motion, has reached the "one o'clock" position. "Two" represents the point where the line has just straightened out at the completion of the back cast. "Three" is called at the completion of the forward cast. These three counts, evenly spaced, represent the timing of a simple forward cast.

PROPER ROD GRIP

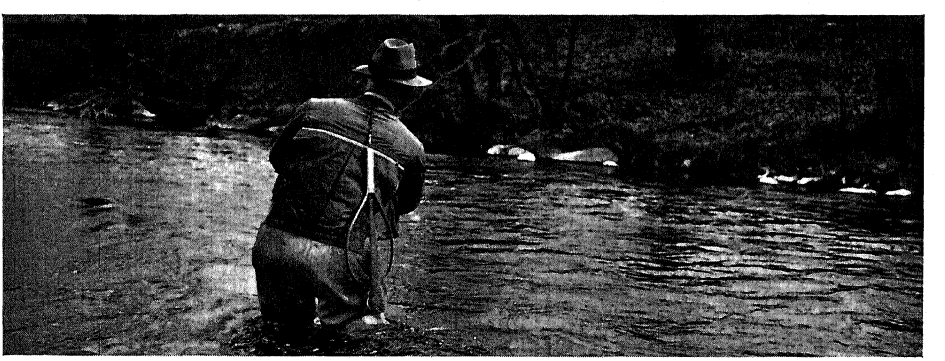
THE HIGH BACK CAST

HOW NOT TO DO IT—WHAT HAPPENS WHEN THE BACK CAST IS TOO LOW



The Pick-up

Start of the Forward Cast



The Finish—Note "Follow-through" with Right Shoulder

HORIZONTAL CAST

To capture more completely the rhythm of the timing, it is sometimes helpful if the caster stretches the word "one" out over the entire motion of the back cast. Just start saying the word as you start the rod and finish it when the rod reaches "one o'clock." This fixes in the mind the timing of the word "two." "Three" just about takes care of its own timing.

In fishing a short line, it is desirable to have the fly touch the water before the leader and line drop to the surface. Thus, in completing the forward cast, aim the fly at a point in the air about three feet above the spot on the water where you wish it to drop. This will hold the cast high enough in the air to allow line and leader to "turn over" and drop the fly to the surface first.

In practicing casting, it is always a good idea to cast at a target or some specific object. Accuracy cannot be learned too early nor too well. Thus it is wise to make every cast an accuracy cast. An added advantage of casting at a target while practicing lies in the fact that in so doing you will become less and less conscious of the component parts which, when assembled, go to make up a well-executed cast. Instead, by focussing your conscious mind on the fly itself, the casting motion and its timing gradually soak themselves so thoroughly into your natural coördination that they soon become automatic. Remember always that so long as you are actively conscious of the various motions which combine themselves into what is known as good casting, so long as you find it necessary to think about these motions while making them, you have not yet learned to cast. A good caster, fishing a trout stream, executes the motions of casting

without thinking of them, his attention being concentrated on the fly alone.

Casting with the left hand has always seemed to me to be a futile piece of business, assuming, of course, that the caster does not happen to be left-handed. It is not only possible but relatively simple to hold the rod in the right hand and cast with it on either side of the body and in any position. For an angler to use his left hand in casting is an admission of the fact that his right hand has not been trained adequately. For me, a right-handed caster, it always seems that the niceties of casting can never quite be achieved with the left hand as well as they can with the right, no matter what the position.

Thus the angler should practice casting with the rod in all positions, from horizontal to perpendicular on either side of the body. Casting with the rod in the horizontal position can easily be learned with a little practice. The rules are the same as those of his first casting lesson, with the exception of the high back cast, which is then impossible.

Casting with the rod on the left side of the body requires a somewhat different technique than that required in forehanded casting. However, there is a method by which this backhanded casting may be learned fairly easily. Without altering the manner in which the rod is held, place the casting hand about one foot from the body and directly in front of the tip of the left shoulder. Now turn the hand so that you are looking at the back of it, with the palm facing directly away from you. Next, elevate the right elbow until the upper arm, from right shoulder to right elbow, is parallel to the ground. You will find

that, with the arm and hand in this position, you will be able to go through the motions of casting quite easily.

Of course, this position should be used only while you are learning the knack of backhanded casting. Once you have accustomed yourself to handling the rod over the left shoulder, it is an easy matter gradually to assume a more comfortable posture.

The first maneuver the beginner must master in order to cast a dry fly is the "figure eight" or, more simply, false casting. As we have said before, the primary object of false casting is to shake the water from the fly and the line. Also, it is a convenient method of lengthening line without disturbing the surface of the water. In learning to execute the "figure eight," bear in mind that false casting is the enemy of sound timing. If you remember this and take care not to confuse the timing of the "figure eight" with that of ordinary casting, you should steer clear of trouble. However, once you allow the timing of the "figure eight" to show itself in the handling of your ordinary casting, then your woes will be many indeed with wet-fly fishing, the salmon rod, and the bass bug rod.

The start of the "figure eight" is the same as that of the ordinary cast, with the exception that the line is thrown back horizontally rather than above the horizontal. As the fly passes the right shoulder, the rod is permitted to follow through somewhat past the "one o'clock" position. As the fly reaches a point midway between the shoulder and the end of the back cast, the forward cast is started. This causes the fly to be whipped around in a circle instead of traveling to the end of the fully extended line, as it ordinarily would. The

forward cast of the "figure eight" finishes just above the "ten o'clock" position. As the fly reaches a point midway between the shoulder and the end of the normal forward cast, the back cast is started once more, causing the fly again to whip around in a circle, thus completing the maneuver. The path in which the fly travels actually describes a figure eight—hence the name.

Never acquire the inexcusable habit, all too common, I'm sorry to say, of allowing the forward cast of the "figure eight" to complete itself into the final, or "power," cast, by which the fly is placed upon the water. Because of the manner in which the "figure eight" is executed, the bend of the line as it travels forward (usually known as the "bow") is necessarily far too wide to permit any degree of accuracy. Rather, to make the final cast at the conclusion of the "figure eight," tighten the hand on the rod grip (it may be loosened and relaxed during the "figure eight") and toss the back cast up and back until the line straightens. Then make the forward cast with decision, as in ordinary casting.

All of the casts described thus far may, if desired, be executed by using only one hand. In order, however, to handle a dry fly satisfactorily, the left hand also should be used. Because the dry fly is fished upstream, as soon as the fly lights on the water the current brings fly and line toward you. To be ready at all times to strike a fish, line must be stripped in through the guides as long as the fly is on the water. This slack line is held in loops in the left hand as it is taken in. While the fly is being dried in the "figure eight" preparatory to being recast, some of this slack may be allowed to slip out

through the guides. The balance should be held in the left hand until the final cast is made. Just as the cast is completed, the line in the left hand is released and allowed to slide out through the guides, pulled by the power of the final cast. This is known as the "shoot." The four successive stages of the "shoot" are shown at the bottom of Plate #1. It is a good plan not to allow more line to accumulate in the left hand than is actually needed to make the forward cast, as extra line is prone to become tangled and will usually render casting a bit more difficult. Your reel is there for the purpose of carrying what line you do not actually need, so don't handicap yourself with line not in use.

To use a dry fly effectively, the angler should be able to throw both the right and the left curve casts. The curve cast will drift a fly over a fish without alarming or warning it by the sight of the line and the leader. To do this, the leader is cast so that it alights on the water in the form of a curve. This permits the fly to drift down ahead of the leader while the line drifts five or six feet to the right or left of the fly.

Of the two casts, the more difficult to learn is the left curve. It is executed with the rod at an angle of about forty-five degrees. Aim the cast at a point in the air about three feet above the water and five or six feet to the right of the spot at which you wish the fly to alight. Then, putting about half again as much force into the cast as is actually needed to complete it, check the cast sharply as the line straightens by raising the rod tip slightly just as the fly reaches the end of its journey. The extra power put into the cast and the checking

of the cast at the finish will cause the fly to snap around sharply to the left and fall approximately at the desired spot. This is known as the "positive" left curve cast.

The "positive" right curve cast may be executed in exactly the same manner, save only that the cast is made backhanded with the rod held at an angle of forty-five degrees to the left of the body.

The right curve cast, as it is usually made, is not a very graceful maneuver to watch. In reality it is merely an ordinary forward cast which has been made without enough power or force to complete itself. It is done as follows: With the rod held almost in the horizontal position to the right, pick up the fly and make the back cast just as is done in the ordinary cast in this position. Then, as the rod is brought ahead in the forward cast, instead of throwing the tip into the cast at the finish to give the usual final impulse, use only the action of the middle joint at the beginning of the forward motion. The tip merely follows through in half-hearted fashion, so that only about half enough power is put into the cast to complete it. The line, lacking the usual final impulse of the tip, will roll out forward in a wide bow and, not having the necessary speed to "turn over" at the end of the cast, will fall to the water while the leader is still curved ahead of the fly. The cast may be slowed up still more by feeding slack line through the guides as the line travels forward. This is known as the "negative" right curve cast.

The "negative" left curve cast may be made in identical fashion by holding the rod in nearly the horizontal position on the left side of the body and executing the cast backhanded.

The advantage of being able to throw the curve casts either positively or negatively will readily be seen when one considers that no two flies have exactly identical weight-to-air-resistance ratios. By way of illustration, a No. 16 fly, such as the Light Cahill, will have such a relatively small amount of air resistance that the positive curve cast in either direction may be made quite easily. On the other hand, a fairly bushy spider fly, dressed on a No. 14 hook, has so much air resistance that it is almost impossible to have it snap around into a well-executed positive curve. On the other hand, a fly having little air resistance makes the execution of a negative curve quite difficult, while a bushy fly makes this cast almost execute itself without much help from the angler. In addition, the length and weight of the leader will make a lot of difference in how these casts may be executed. Naturally, a heavy, short leader makes the positive curve a relatively simple matter, while a long, light leader does the same for the negative curve.

There are many "novelty" casts and combination casts which can easily be learned by the angler after he has mastered the essentials of good casting. As a matter of fact, each angler develops his own technique after he has fished for a season or two. Short line casts, "tip work," obstruction casts, and so on will naturally delevop themselves after the angler has familiarized himself so thoroughly with his rod and line that they have become almost a part of him. However, it is not necessary to discuss these casts at present. If you have learned to keep your back cast well up and can master timing, you will handle easily any unusual situations which may arise on the stream.

Chapter 7. STREAM TACTICS

General Discussion and Wet Fly Methods

THERE was once a boy who lived in a small village. This boy, although thought to be somewhat eccentric by his friends, possessed uncanny judgment about matters that immediately concerned him. One day, a horse belonging to his neighbor broke out of its pasture and disappeared. The farmer looked high and low for his horse and then, not knowing where else to turn, asked the boy to try to find it. The boy agreed and in a surprisingly short time appeared at the farmer's gate, leading the missing horse.

When asked how he had managed to find the horse so promptly, the boy replied, "Well, I went down to the pasture and sat down to think about it. I thought just where I'd go if I was a horse and had broken out of the pasture. Then I went to that place and there he was."

If more anglers would apply this boy's logic to their fishing, it would be a sad day indeed for the fish. Most fishermen, however, pay little, if any, attention to the probable behavior of the fish under a given set of conditions. Instead, they just go fishing, using the same "chuck and chance it" methods day in and day out. The result is that they obtain the minimum of pleasure from the sport.

As a matter of fact, far too large a share of the average angler's pleasure derives from the thrills of anticipation and from living over

in retrospect the high spots of his excursions. The time he actually puts in on the stream is not, as a rule, very pleasantly spent. By way of illustration, let's take a quick look at the behavior of the legion of "rubber boot" fishermen that infests our streams on the opening day of each trout season. For several weeks prior to opening day they haunt the tackle shops, making small purchases and talking fishing. The eve of the opening day finds them in a veritable fever of excitement of preparation. Closets and attics are ransacked for missing gear. Alarm clocks are set for ungodly hours. They finally retire, to sleep fitfully until the zero hour. Then they gulp their breakfasts and rush to the streams. In the chilly air of the early season they spend the first hour or so vying with each other for the choice locations. Stream etiquette either is unknown or tossed to the four winds as they splash through the pools and ruin their own and the others' chances of taking trout. Becoming dissatisfied with results in the location of their first choosing, they climb into their cars and rush to adjacent streams, only to find equally dissatisfied anglers leaving those streams to rush to the one which the others have just quitted. Evening finds them dog-tired and usually fishless. Yet year after year they go through the same performance. It just doesn't make sense.

To get real pleasure from your fishing, it seems wiser to adopt the homely logic of the country boy. This boy, to be able to think like a horse, must have understood horses. By the same token, an angler, to place himself mentally in the position of the fish, first must understand not only the fish themselves but the proper use of the tackle with which he intends to catch them.

PARMACHENE BELLE

MONTREAL

PROFESSOR

SILVER DOCTOR

GRIZZLY KING

FLIGHT'S FANCY

COLONEL FULLER

MILL'S NUMBER ONE

LEAD WINGED COACHMAN

ROYAL COACHMAN

GREENWELL'S GLORY

WICKHAM'S FANCY

DARK CAHILL

LIGHT CAHILL

MARCH BROWN

HENDRICKSON

GOLD RIBBED HARE'S EAR

QUILL GORDON

BLACK GNAT

CLARET GNAT

GINGER QUILL

STONE

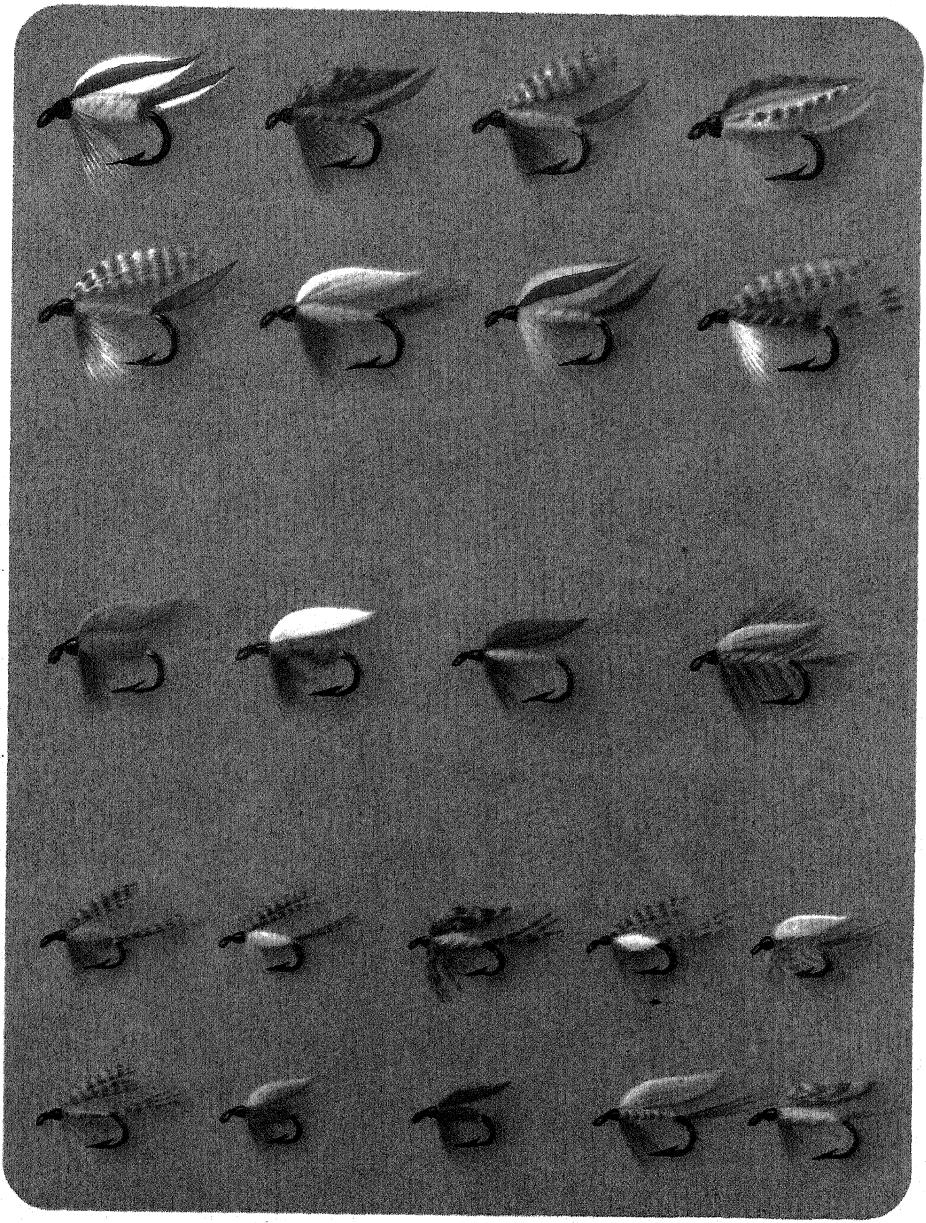


PLATE 2. WET FLY PATTERNS

Consider, for instance, the use of the wet fly in taking trout. Entire books have been written about the wet fly, and without doubt there is a lot to learn about it. But for the beginner to get together the fundamentals of wet-fly fishing is not a job of very serious proportions.

In the first place, the wet fly is intended to represent one of the more important items of the trout's menu. The riffles of a trout stream contain approximately 75 per cent of the food that the stream holds. Every rock is encrusted with insect cases and crawling with nymphs in various stages of development. When the appointed time arrives, a certain group of these nymphs casts loose from the rocks and drifts with the current. Some few varieties break their cases on the bottom of the stream and appear at the surface as adult insects, but the majority rise to the surface as nymphs, crack their cases there and emerge as adult flies. Before taking wing, it is necessary for the newly hatched insects to dry somewhat and to oxidize in order that wing membranes and body cases may harden. For the drying process, they usually use as tiny rafts the shucks from which they hatch. As soon as the case is broken, the little insect struggles frantically to free itself. Immediately upon doing so, it begins to flutter its wings to hasten the drying and oxidizing process. Nature teaches it that time is a vital factor, for the fragile craft on which it rides floats only awash and will submerge quickly in rough water. As a rule, the newly hatched insect drifts only from twelve to fifteen feet before taking flight. Should the hatching process take place in the riffles, many of the less fortunate are caught in a wavelet and submerge before they

can try their wings. These little fellows are drowned and drift under the surface through the riffles and down into the pool.

The life of the adult aquatic fly is a short one. Some live but a few hours. Immediately upon taking wing, they join in the nuptial flight, mate in mid-air, and return to the surface of the stream to lay their eggs and die. The insects that have thus fulfilled their natural mission drift with wings erect so long as life remains in them. As they die, the wings fall to the surface at right angles to the body, and the fly floats awash instead of being supported just above the surface by the tiny legs and feet. These flies are known, in angling terminology, as "spent spinners." It is to simulate these "spent spinners" that the spent-wing fly is used.

One of the mysteries of nature, which fascinates me every time I see it in operation, is the manner in which aquatic insects, newly emerged from the nymphal shucks, unerringly make their way *upstream* almost as soon as they take wing. Nature has taught them that only in this way can they offset the wash of the current and thus insure the food supply of the stream by planting their eggs *above* the point where they, the parents, will have reached the end of their life span. Were it not for this faculty of flying opposite to the direction of the current, it would take but a very few years to empty our streams of aquatic insect life. One can understand how newly hatched duns quickly know current direction when they happen to hold their nuptial flight over fast water, but in the long, still "flats" of the larger rivers, the direction of the current is not always easy to determine. Yet the little fellows always manage to figure it out somehow and with

few exceptions make their way toward the headwaters as soon as their tiny wings will carry them.

There are many varieties of aquatic insects that live in the adult state for several days. Usually these varieties hatch at night. The caddis flies, alder flies, some of the May fly varieties, and most of the stone flies, instead of hatching on the surface of the stream, will crawl out upon the rocks or up on the earth banks of the stream, where they may hatch at leisure during the dark hours. One variety of stone fly prefers the trunk of a convenient tree or a log beside the bank on which to hatch. Some, such as the large May fly drake, hatch in an incomplete adult form known as the "*sub-imago*." Then, some twenty-four hours later, they once more break their shells, this time in the trees beside the stream, and emerge as full-fledged adult flies in the final or "*imago*" stage.

Though interesting, it is not essential that the angler acquaint himself with these various types, their hatching and mating habits and the nymphs from which they come. It is enough for him to know that their nuptial flights take place above the stream and that the spent duns fall into the water and die when the flight is over. He need only recognize what may be happening at any particular time, so that his angling may conform to existing conditions. Should a hatch be in the early stages of development, so that it is reasonable to expect that a liberal number of drowned insects may be drifting below the surface, then the choice of a wet fly will be the logical one. In selecting the fly, it is well to imitate, as closely as possible, the developing hatch. Should the hatch be in its final stage and the trout be feeding upon

spent spinners, then the choice of either a wet fly or a spent-wing dry fly would be correct. Should the hatch be in the very early stage, when only the nymphs are drifting preparatory to breaking open their cases and hatching as adult flies, then, naturally, the choice of an appropriate nymph would be most productive. The main thing for the fisherman to remember is that he must suit his angling to what is going on at the time.

In wet fly fishing, the rig of former years, consisting of three snelled flies and a six-foot leader, has given way to the seven and a half- or nine-foot tapered leader and one or, possibly, two eyed wet flies. Wet flies that are tied on gut snells do not, as a rule, stand the test of time. It is much safer—and less expensive—to use eyed wet flies which can be tied to the leader and tested just prior to use. If you prefer two wet flies, loop a gut tippet around one of the leader knots and attach the "dropper" fly to that.

There are two schools of thought concerning the correct handling of the wet fly. For convenience they may be called the "dead fly" school and the "live fly" school. The former maintains that a wet fly should be fished so that its action simulates the behavior of the fly it represents: i.e., drifting lifeless with the current and without motion imparted by the line. The "live fly" school insists that allowing a fly to drift "dead" may be all very well in theory but that in actual practice more fish will be taken if wet flies are kept constantly in motion to attract the attention of the fish and thus interest them in the moving fly in contrast to thousands of others that are not moving. These two schools, being diametrically opposed, are as far apart as

East is from West "and never the twain shall meet." Well, I'm not taking sides. There is much to be said for each method.

To fish a wet fly "dead," it should be cast upstream and allowed to drift with the current. In this way, "drag" (that bugbear of the dry-fly angler) may be avoided. Should the stream be wide enough, the easiest way to handle a wet fly is to cast obliquely up and across, and allow the current to carry the fly down until it begins to swing across below you. Then, if you are a stickler for form, it may be picked up and recast.

To keep the fly "alive," cast it directly across stream from you and, if you are using a short line, keep it moving by lifting the rod tip. When you are using a long line, motion may be imparted to the fly by lowering the rod and stripping in line through the guides. In either case, you will usually get better results if you make the fly move erratically. With the short line, you can easily vary the motion of the fly by moving the rod tip to suit your fancy. With the long line, the line may be stripped in through the guides in short, erratic, well-spaced jerks, timed at intervals of about one second.

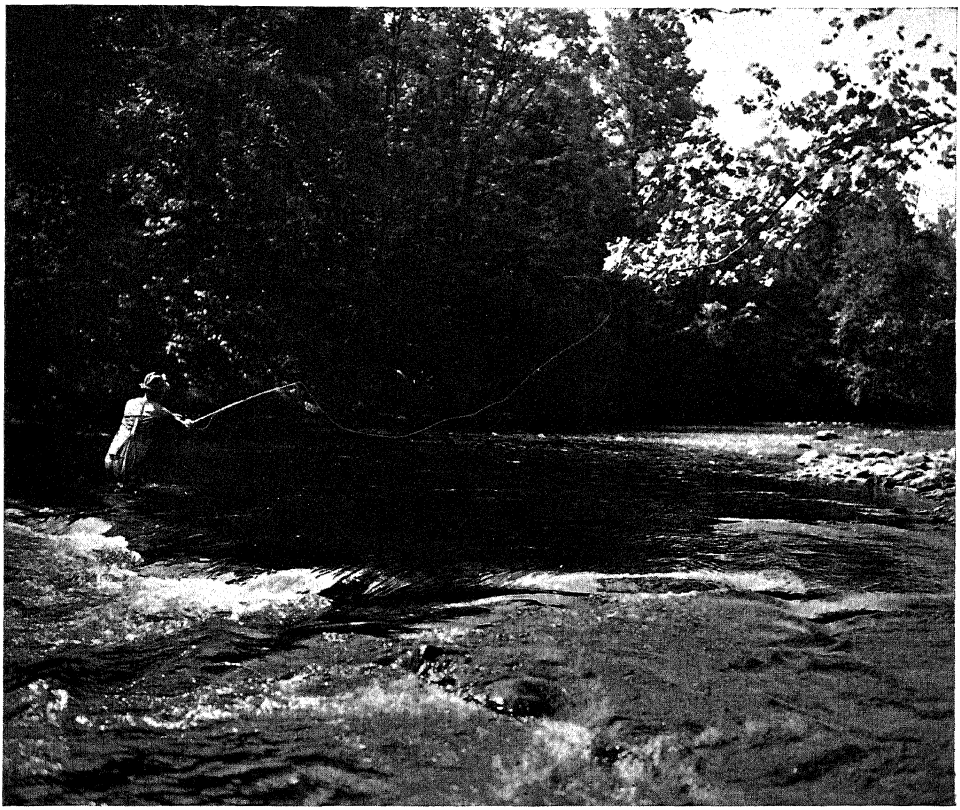
It has always been my feeling that it is impractical to adhere to any one method to the exclusion of all others. Hence, when I am fishing a wet fly, I use a combination of methods by which the greatest possible efficiency is obtained from each cast. Consider, for instance, a pool or run in the East Branch of the Delaware River. This stream is large enough to suit the long caster. When using a wet fly in the Delaware, I cast across and about forty-five degrees upstream. The fly is allowed to drift without drag as long as possible. When, at

last, drag is unavoidable and the fly begins to be pulled away from the far bank by the force of the current against the line, I vary the speed with which the fly moves by stripping in line through the guides. I find that I take just about as many fish when the fly is moving as I do when it is drifting without motion.

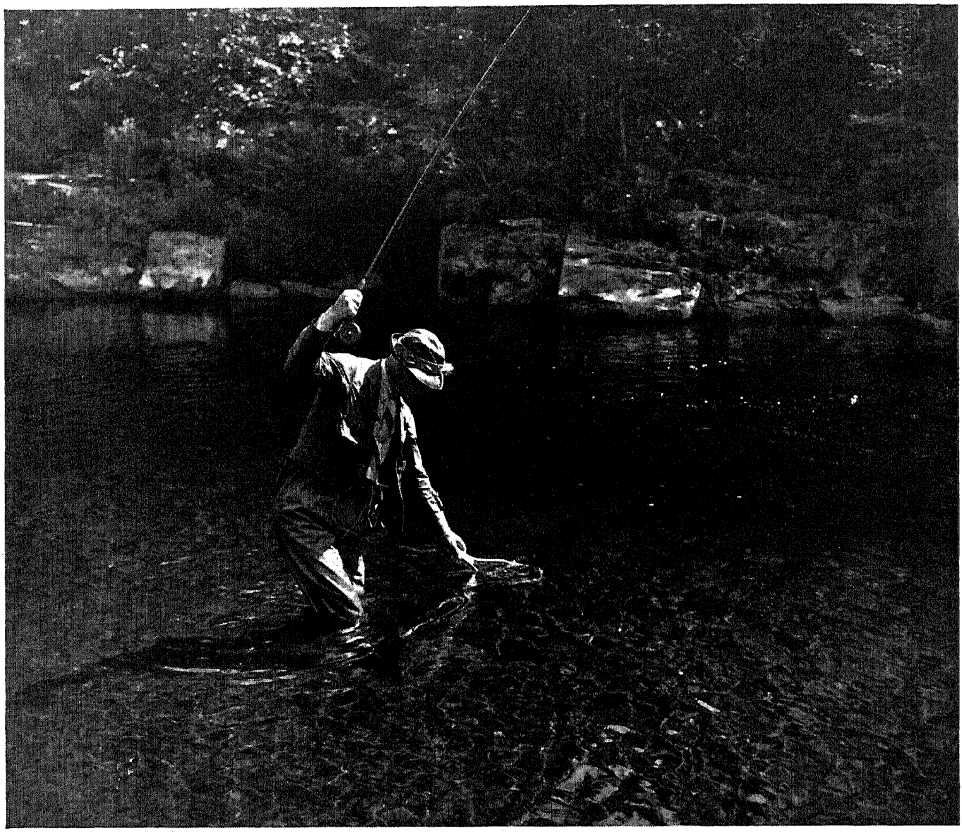
When fishing the smaller streams or the pockets about the rocks in the riffles of the larger streams, excellent results may sometimes be had by fishing a wet fly upstream and using a reasonably short line. The fly is cast to the upper side of the run or pocket and allowed to drift "dead" toward you. With a line of from twenty to thirty feet, enough slack may be taken in through the guides to give you control of the fly at all times merely by grasping the line with the left hand just behind the "hand guide" of your rod and then slowly taking up the slack by extending the left arm as the fly drifts toward you. This eliminates the necessity of gathering the slack line in loops in the left hand and permits an easy "shoot" of the line when the fly is recast.

When casting a wet fly, it is well to remember that the fly, leader, and line will function better when wet. Therefore, avoid unnecessary false casting. Every false cast shakes the water from your terminal tackle and cuts down the sinking qualities. One or two false casts will sometimes dry your leader and line enough to cause them to float. Then they must be pulled under with the risk of alarming the fish and cutting down the effectiveness of that particular "drift."

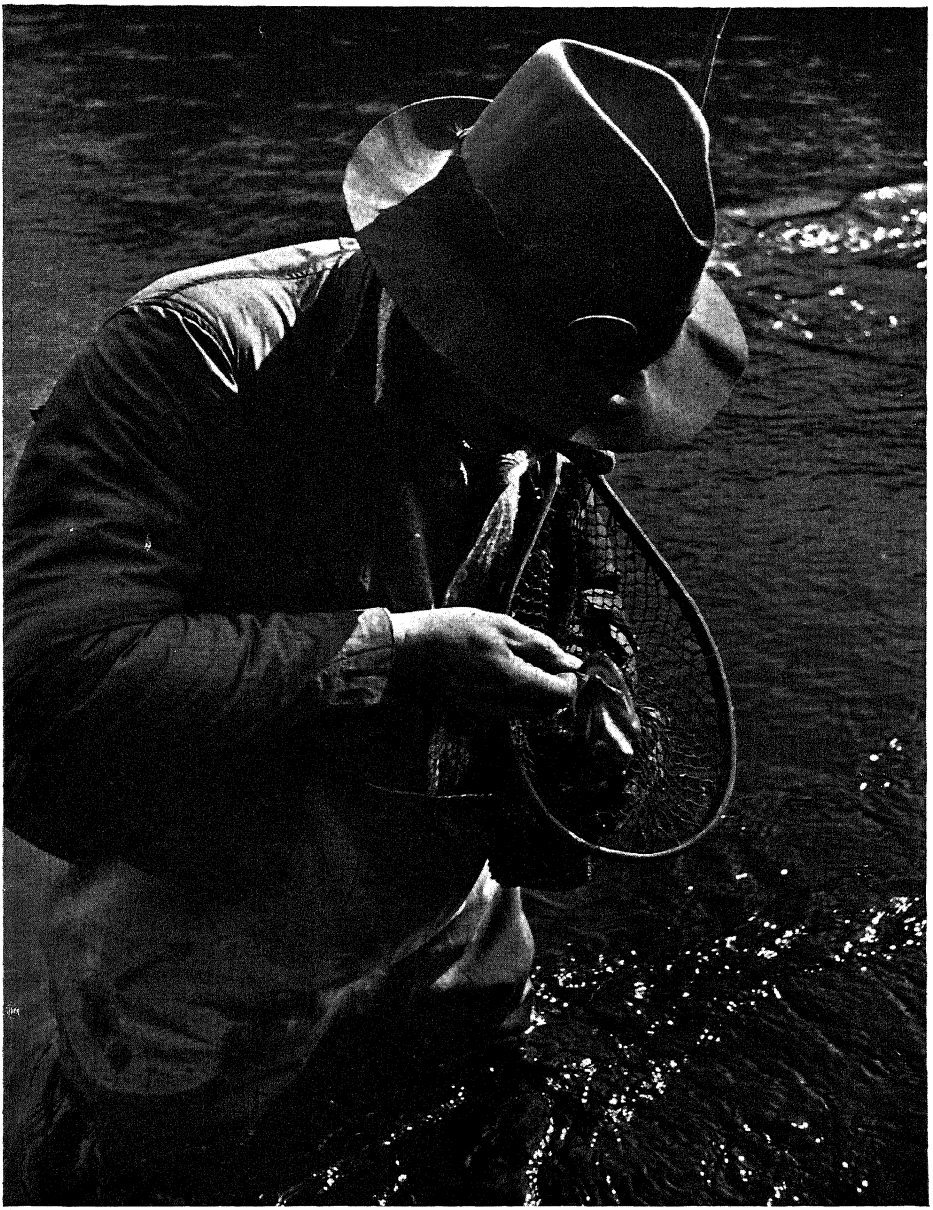
There is a method of fishing a wet fly which does not conform to the theory of either the "dead fly" or the "live fly" school yet is,



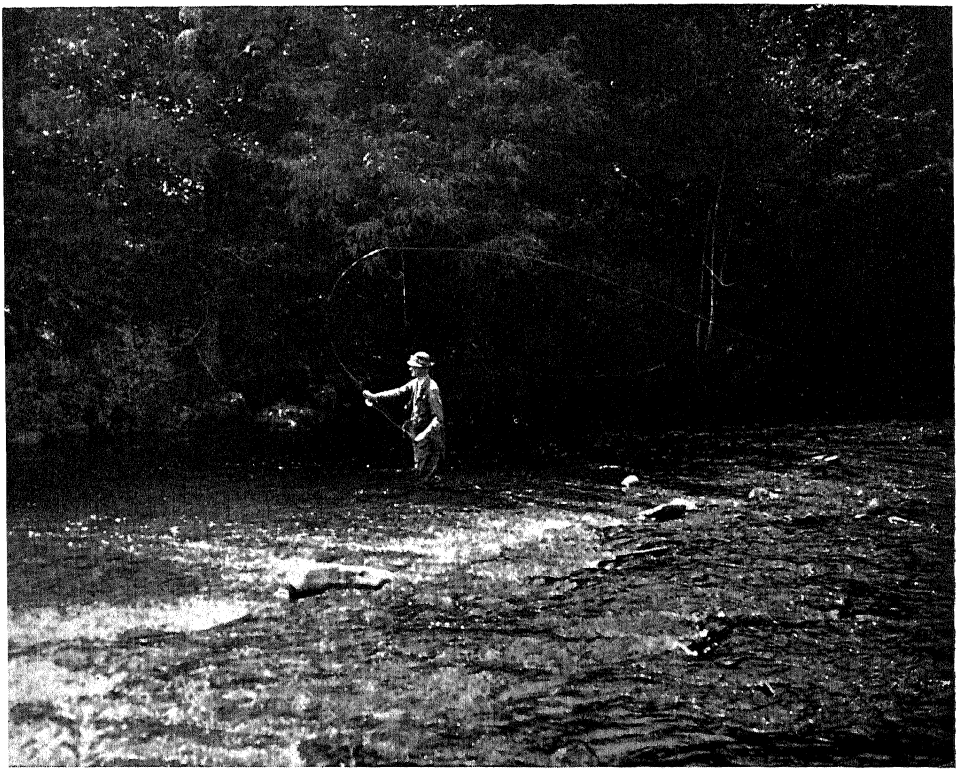
REACHING FOR A RAISE



BRINGING THE NET UP UNDER THE FISH



TO PLAY SAFE, HOLD YOUR TROUT IN THE NET WHEN REMOVING THE FLY



THE POWER CAST

in reality, a combination of both. When fishing "across and down," there naturally comes a time, if you allow the fly to drift long enough, when the line extends directly downstream. Instead of lifting the fly and recasting, strip in line through the guides in short, well-spaced jerks until the fly is fairly close to the rod tip. Then, feeding line out through the guides, allow the fly to drift back downstream perfectly "dead" until the limit of the line has been reached. Now, holding the rod parallel to the surface, retrieve the fly once more in well-spaced jerks, either by moving the rod parallel to the surface or by stripping in line through the guides. This maneuver, which may be repeated several times before recasting the fly, is frequently effective.

Anglers in Michigan have developed a technique based on this mode of wet-fly fishing which they use with good effect in the small, bushy streams of the upper peninsula. Taking their stand in a spot that is open enough to allow free movement of the rod, they work the wet fly down under the tangle of bushes. By releasing additional line with each drift, they can cover thoroughly as much as seventy and eighty feet of stream below them. I fished with one man who had no difficulty in drifting his entire casting line sometimes around two and three bends in the stream. Properly handled, the line will follow the thread of the current, and with this method one can reach water otherwise inaccessible.

In the early days of fly fishing, when standard equipment consisted of a heavy six-foot leader and three snelled flies, the conventional method of fishing bore little or no relation to that of either of the modern schools. Short-line casting was the order of the day

and only one hand was used in the casting. The rods being equipped with "ring and keeper" guides, "shooting" a line with the cast was not only unknown but also impossible. The flies were usually fished downstream and on the surface. The prevailing method was to cast down and slightly across the stream, so that the tug and swing of the current could be utilized. The two lower flies were fished just under or on the surface, and the upper "dropper" fly was allowed to dance free, sometimes in the water and sometimes just above it. Motion was imparted to the flies by a rhythmic twitching of the wrist (much in the manner which might be expected if the angler had the palsy). Strangely enough, this method is extremely effective if done correctly. To my way of thinking, it is not a pleasant way to fish and it is totally unsuited for the pools and runs of the big rivers. But in the brooks and tributary streams, and, for that matter, in the riffles and pocket water of the larger streams, it will get you a lot of action.

There are a few generalities having to do with wet fly fishing that may be useful. By and large, the "dead fly" method seems to be more effective when using flies of the "exact imitation" type. Conversely, fancy flies are usually more taking if "kept alive." If the trout are feeding, it is usually better to try to "match the hatch" with one of the "exact imitation" group, but if the trout are not "showing," a "fancy" fly will probably be more productive. In cloudy water, a fly with some tinsel on the body or with some show of bright color will frequently attract more attention than one of the drab-colored patterns. If the fish are feeding sparingly and "coming short" to your fly, try changing to the next smaller size. Finally, remember

that you will take more trout if you place your fly where the trout is most apt to be instead of just "searching the water" with random casts. Some spots in the stream are unmistakably the homes of trout, and you will soon learn to recognize them. If you take care to have your fly come to these spots in as natural a manner as possible, your chances of taking trout are far better than if you fish casually, leaving the taking of trout more or less to luck.

Chapter 8. STREAM TACTICS (*Cont.*)

Bucktails and Streamer Flies

ALTHOUGH the bucktail was developed in 1908, its use did not become general until about 1926 or '27. Today it would be an unusual thing indeed to find an angler whose kit did not include a liberal selection of these flies. Strangely enough, this spread in popularity has not carried with it the general knowledge of the way in which this fly can be used to the best advantage. Far too many men are content merely to cast the bucktail across a fast water run and then retrieve it on or near the surface as the current sweeps it around. That fish are thus taken is ample testimony of its efficacy, but that is not the way to get the best results.

In the first place, since the bucktail is used primarily to take large trout, it naturally should be fished in water where big fish are most apt to be. It is not, as many believe, effective only in fast water. With a bucktail, I have taken some very respectable trout from deep, quiet pools. But to do this, it is necessary to handle the fly properly.

Large trout have several characteristics which should be kept in mind when you are fishing a bucktail. In the first place, they are wise in proportion to their size, and must be treated accordingly. Having arrived at the cannibalistic stage, they are less prone to feed than are the smaller trout, and being big enough to interest osprey, mink, and other large predators, they are naturally reluctant to show themselves.

Most of their feeding is done at night, so it is not an easy matter to interest them in artificial flies during the daylight hours. Yet it can be done.

Having selected a piece of likely water deep enough to allow ready movement on the part of large fish, the problem is to determine how to fish it most effectively. Bear in mind that the trout usually will be in their resting stations, not in the feeding positions in the open water. Resting stations for large fish may be under overhanging or undercut banks, at the bases of large boulders, or at the bottoms of heavy runs where the fish can find quiet spots behind some hidden rock or ledges. Logs and brush in the stream will usually harbor large fish. All these spots you should fish carefully, remembering always to remain unobserved.

Be sure to use a stout leader when you fish a bucktail, for the method of fishing it and the speed with which the fish generally hits the fly make the use of light gut hazardous in the extreme. It is unwise to use a bucktail with a leader whose diameter is less than ten thousandths of an inch.

Having in mind that a large trout is reluctant to show himself during the daylight hours, a bucktail is more effective if fished well below the surface. This can be managed by weighting the fly, the leader, or both, or by using a fairly long line. For me, the latter method is preferable, as I dislike casting weighted tackle. The method that seems to be most effective is to cast the bucktail across and slightly upstream. Allow the cast to drift with the current, so that it can sink, until it has been carried below you. Then, lowering the

WARDEN'S WORRY SUPERVISOR FRANK COOPER SCRIPTURE #1

FAMILY SECRET BLACK AND WHITE EMERSON HOUGH (VARIANT) SCRIPTURE #2

BLACK GHOST MICKEY FINN TOP AND BOTTOM PHOENICIA

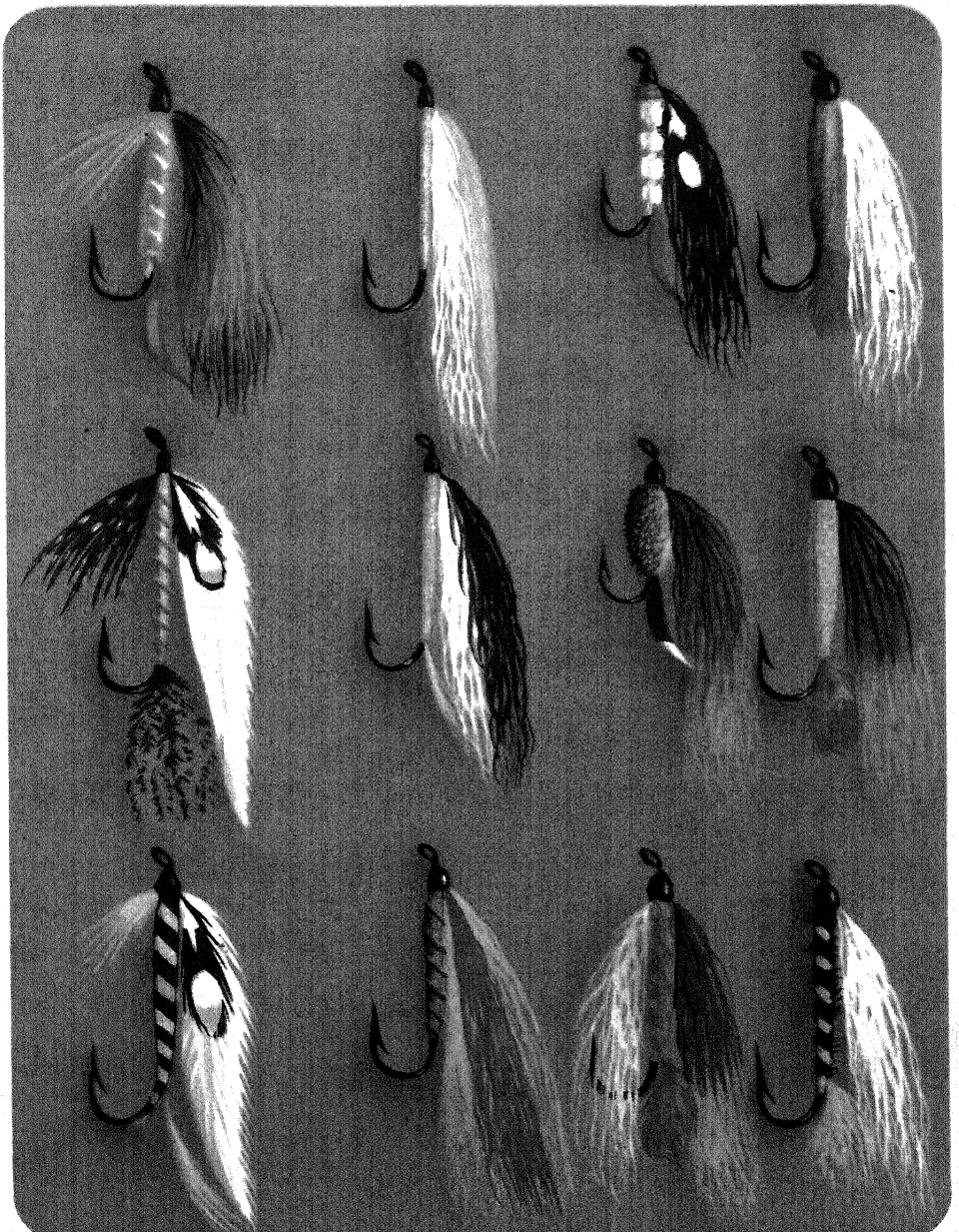


PLATE 3. BUCKTAIL AND STREAMER PATTERNS

rod until it is parallel to the surface, retrieve the fly in sharp, well-defined, and well-spaced jerks. On each jerk the bucktail should be pulled rapidly through the water for a distance of two or three feet. Between jerks it should be allowed to drift "dead." The jerks should be timed at intervals of about one second. The retrieve can be made either with the rod itself or by stripping line in through the guides. When fishing the deeper pools, allow the line and the fly to sink as close to the bottom as possible before beginning the retrieve.

You will note that trout usually strike a bucktail solidly. They seem to appear from nowhere, strike the fly from the side, and turn as they do so. Should the strike come just as you begin one of the sharp jerks of the retrieve (and it usually does come then), you can readily see what would happen to a fine gut leader.

One of the peculiarities of bucktail fishing is the large number of strikes in comparison to the number of fish that are hooked. I have come to the conclusion that these missed strikes are, in reality, not misses at all. A big trout doesn't miss the minnow he wants for his supper. Neither, in my opinion, does he miss the fly if he wants it. What actually happens is that the fish goes for the fly with every intention of taking it. Then, at the very last instant, he sees through the deception and changes his mind. As he tumbles over the fly when turning to return to his station, you have the sensation of a missed strike. The coördination of eye and hand is not fast enough to permit an angler to take a fly away from a trout that wants it. The rarity with which a strike is missed at night, when color and detail are more obscure to the fish, seems to bear out this contention.

There is a bucktail rig, peculiar to the Catskills, which takes many big fish and seems to be even more effective than the single bucktail. The leader, a heavy one of about six to eight feet, is equipped with a loop about midway between its ends, and the leader is fastened to the line in such a way that this dropper loop, instead of sloping toward the tail fly, is reversed so that it points toward the angler. A bucktail is attached to the free end of the leader and another, tied to an extra heavy snell, is fastened to the dropper loop. The usual rig is a white fly at the tail and a brown dropper. This rig is fished in the same manner a single bucktail is handled. When the two flies are retrieved, the angle at which the dropper bucktail is attached to the leader is such that each jerk imparts to it an erratic motion that seems to be more attractive to the trout than the straight pull. Most of the fish taken on this rig will be taken on the upper fly.

Bucktails may be used in lakes just as well as in streams. The rules are about the same. Remember to use a long line and allow the fly, or flies, to sink well below the surface before beginning the retrieve. The retrieve is made more easily and the fly retrieved lower in the water if the rod is kept parallel to the surface while the line is stripped in through the guides and coiled in the bottom of the canoe. This method is exceedingly useful in taking "square tail" and landlocked salmon in the lakes of Maine, Vermont, and Canada.

With the streamer fly, the method of use is not as clearly defined as with the bucktail. If you choose, you can apply the same technique to the streamer fly that you do to the bucktail and your success will be about the same. Small streamers can be fished effectively just as though

they were wet flies. They depend, however, upon motion to render them interesting to the trout, and the "dead fly" method, which is so often so deadly with wet flies, does not work with the streamer. To be effective, streamer flies must be "kept alive."

An interesting and productive method of fishing the streamer fly—a method not practical with the bucktail—is as follows: Choose a streamer that has a flimsy wing composed either of non-rigid hackle feathers or of marabou. The hook should be small and very sharp, because the best results will be obtained by using a nine-foot leader tapered to 4x. The fly should be cast cross-current and, instead of retrieving it with the usual "short jerk" method, let it drift with the current. As the fly drifts, vibrate or twitch the rod tip gently, so that tiny, sharp impulses are transmitted to the fly, causing it to move slowly and erratically through the water. The light leader allows the fly to twist first one way and then another as it moves slowly across and down with the flow of the stream. The trout take a streamer handled in this fashion with a rise that is peculiar to the method. Seldom is there the smashing strike so common with other methods. Instead, the fish roll up leisurely, inspect the streamer, and either take or refuse the fly with no show of haste at any time. Care should be taken in setting the hook. It is best to wait until the trout has turned and is well on his way home again before raising the rod tip. And when you do raise the tip, don't strike the fish as you would if you were using heavy gut. Merely raise the tip and tighten—the small, sharp hook will do the rest.

In the summer of 1938, while traveling through Ontario, I was

invited to fish a private pond that had been heavily stocked with large native trout. The afternoon was overcast, windless, and with a promise of rain in the air. There was a scattering of insects on the surface of the pond, but they were of a dozen different varieties, with no particular type prevailing. Now and again one of the trout would rise and take a natural fly from the surface, but these rises were intermittent and scattered, giving no indication of steadily feeding fish.

Before deciding upon the best method to use under these conditions, I went over the matter with my boat companion.

"It would be a fairly simple matter," I told him, "to dredge for these fish with a streamer fly fished fifteen or twenty feet under the surface. If you want fish to take home, that's a pretty sure way to get all you want. But, it isn't much fun. I think that it would be a lot more amusing to try to find a dry fly that would bring them to the surface. We may not get any trout, but it would be interesting to see what happens."

He agreed with me that fish were not essential to his happiness and that the dry fly might prove more interesting, fish or no fish. So we fished dry fly. Dozens of patterns were tried without success. We had several rises, hooked and lost a few trout, and I, at least, had a delightful afternoon, even though it proved to be unproductive from the standpoint of fish killed.

The following summer I visited Toronto and was immediately invited to fish the same pond. With the invitation came the expressed hope that I "do better than I did last year." Several times that morning

I was greeted with similar remarks. Obviously the news of my fishless afternoon of the previous year had been well circulated.

When we reached the pond that afternoon, I found, fortunately, that conditions were almost identical to those of the year before. This time there was no discussion of methods. I merely asked my host how many trout he wanted.

"There are too many trout in the pond," he replied with what seemed to me to be a knowing smile. "Kill as many as you like."

Selecting a heavy line, I scrubbed the end of it with mud from the edge of the pond, to make sure that each cast would sink. My leader was eleven feet long, tapered to 2x and stained dark brown for sub-surface use. The fly was a streamer pattern which I knew would take fish. The method used that afternoon is orthodox for lake fishing when the trout lie deep. First comes the long cast—sixty or seventy feet if possible. Next, lay the rod down in the boat and light a cigarette or look at the scenery while the line sinks. Then retrieve slowly with the "short jerk" method, coiling the slack line on the bottom of the boat. Within half an hour eight fine trout, ranging from one to two pounds, lay in the bottom of the boat. Then I began to release trout as they were netted. When the dinner gong sounded, I had taken twenty-nine fish and had hooked and lost half as many more. It wasn't very much fun, but a man who writes about fishing is supposed to catch fish. When confronted with this necessity, a streamer fly is usually to be depended upon to meet the emergency.

Since the increase in popularity of the artificial nymph in 1933, I suppose that I have heard this remark countless times: "Yes, I sup-

pose nymphs will take fish, but I never have had much luck with them. I guess I don't know how to fish them."

Unfortunately, it seems to be inevitable that with the introduction of each new or different method of angling comes an aura of mystery, an overemphasis of the ways and means, which tends to elevate and obscure such an innovation to the point of rendering proficiency in its use practically unattainable. This was the case when the dry fly (to me, the simplest and the most pleasant form of angling) was first introduced. False casting, right and left curves, drag, and so on were explained, expounded and exaggerated to such an extent that the average angler hesitated even to attempt this new way of fishing. The purist (God save the mark) came into being and spoke loftily, if at all, to the lowly "wet fly man." And now this same tendency shows itself among the nymph fishermen.

In the summer of 1932, at the camp of Mr. Edward R. Hewitt in the Catskills, I tied what I believe were the first flat-bodied artificial nymphs. This is not related for reasons of self-glorification. Any one of us at camp that weekend could easily have done the same; I just happened to be sitting near the table when the suggestion of flat-bodied nymphs was discussed. It is set down here merely as a fact in the light of what came later.

In the summer of 1938, while my son and I were fishing a well-known Pennsylvania trout stream, I, in company with a game warden, watched an angler take a trout from the stream. He did this quite elaborately. The stance was studied and a little uncomfortable, and he cast, consciously, a long and graceful line, turning his head with the

rod to see that the back cast came off correctly. He fished out each cast with a grim look upon his face, using a slightly crouched position as though he were ready to pounce upon any trout that showed itself. The fish was hooked, played, and netted with meticulous finesse. Then I had the temerity to ask him what fly he was using. Having reduced me at least two feet in stature with the withering severity of his gaze, he answered my question.

"I took him," he said, pausing just enough to give the proper emphasis, "on a flat-bodied nymph—very effective in these waters *if* you know how to fish it."

The game warden saved the day.

"I'll bet you a buck," he said in an undertone, "that he could teach Bobby Jones how to putt."

There is nothing particularly difficult about fishing an artificial nymph. The problem is not so much to know *how* to fish them; rather it is a question of knowing *when*. If you have been able to sense what is happening on the stream when the trout are nymphing, you will have little trouble in determining how best to fish the artificial.

An artificial nymph is, of course, supposed to simulate a type of food in which the trout are interested at the time. If you are fortunate enough to be present when a hatch is developing, and the nymphs are casting loose from the rocks and drifting with the current, and, more important, if you are able to diagnose the symptoms, then you will find that the well-selected nymph is a very deadly lure indeed. Frequently you will see trout rising when there is nothing on the

surface on which they can feed. The chances are that these fish are feeding to a developing hatch and taking nymphs under the surface as they drift down from the riffles. A few experimental casts with a dry fly will verify your suspicions as the fish ignore your fly and continue to rise. Then it is your job to learn what type of nymph is drifting. If you can do this without disturbing the fish, so much the better, but if you must alarm the fish to identify the nymph, don't worry about it. Get right into the pool with them and locate the nymph. You will find that they will be feeding again by the time you have regained the bank and changed your terminal tackle.

When the trout are feeding near the surface, I fish a nymph upstream and allow it to drift "dead" just as the naturals are doing. It is better to use a short line, for then you can see the fish take. Fewer strikes will be missed if you can see exactly what is going on. I try to move my feet as quietly and as infrequently as possible, and I lead all hooked fish down and away from the active feeding area as soon as I can.

On the larger streams it is often impossible to wade into the main current at the foot of the riffles. Investigation of the quieter water downstream frequently will give no inkling of the answer, because all drifting nymphs are picked up by the feeding fish. In such a situation, the only thing to do is to try one pattern after another until you are lucky enough to hook a fish. An autopsy on the bank will tell the story as you examine the stomach contents of the trout.

Always remember that feeding activity in a trout stream is the

exception rather than the rule. As "the rise" lasts only a comparatively short time, the stream usually is quiet and without signs of feeding fish. It is at these times that the nymph is useful. Methods, however, must be altered to suit conditions.

On the East Branch of the Delaware River there is a piece of water known as Tishmacher's Flat. The riffle at the head of the "flat" swings in at an angle, throwing the main flow of the current against the far bank, which is the base of a steep hill. There is little shore, and the bank, for the most part, drops off quickly to a depth of four or five feet. Ledge rock provides a multitude of hiding places and, to make things complete, a constant flow of spring water trickles down from the rocks. As one might expect, the pool is an ideal home for large trout.

Because the flow is not fast enough to roughen the surface, Tishmacher's Flat is not an easy place to fish successfully. Careful wading and long casts are essential to good catches, but when the fish are feeding, Tishmacher's makes ideal fishing. There is plenty of room for casting and the even rate of flow helps to prevent drag. When, however, the fish are not feeding and have returned to their resting stations, it is a difficult job to take them. Then it is that the nymph comes into its own.

If you cast a long line across and upstream, your nymph will sink right to the bottom, and after a few experimental casts you can judge the rate of flow and the rate at which the nymph sinks, so that the cast can be drifted under the ledges. If done properly, many surprising things happen to you in Tishmacher's Flat. I have spent

many an uneasy night dreaming of the big trout that have outsmarted me in that famous pool.

One of the most successful nymph fishermen I know has developed a method of his own in the use of this lure. He selects the quiet, deep pools in the stream and, using a flat nymph that has been dressed over a weighted body and a nine-foot leader tapered to 4x, he casts upstream and across with a fairly long line. The line, well greased, floats on the surface while the weighted nymph sinks to the bottom and is dragged slowly downstream over the rocks. The number of large fish this man takes in a season is nothing short of remarkable.

When fishing a nymph on or near the bottom, it is always better so to calculate your cast that the nymph will drift through the spots most likely to hold trout. Should there be a large boulder on the bed of the stream, cast far enough above it to let the nymph drift down to the base of the rock on the upstream side. It will then be carried past the boulder directly through the spots where trout lie. A difference of as little as six inches in the depth at which the nymph drifts often will make the difference between success and failure.

It is rarely necessary to strike a fish when fishing a nymph. Sometimes you may see the flash of the trout's side as he picks up your lure, but usually you will not be aware of the fish until your line stops drifting or begins to move in another direction. Then raise the rod tip and apply pressure. To strike the fish means to risk broken tackle or to pull the hook free. It is better to handle a nymph gently.

Take no stock in the mystery with which some anglers still per-

sist in surrounding fishing with a nymph. There is no mystery about it. If you analyze conditions and suit your method to what is going on at the time, nymph fishing is no more difficult than fishing with the wet fly or the streamer. Lack of success is usually caused by one of two things: an ill-chosen lure or failure to suit your method to existing conditions. It's up to you to find the answer to the problem, but it is not difficult if you follow the dictates of your own good judgment. Let the other fellow worry about the "mystery" of nymph fishing. So far as I have been able to learn, it is largely a matter of sound judgment and common sense.

Chapter 9. STREAM TACTICS (*Cont.*)

The Dry Fly

ON a chilly afternoon in late April, 1919, we were driving along Route 17 of New York State. The day had been devoted mainly to exploration. A new trout stream had been "discovered," its location and its secrets whispered to us in strictest confidence. Naturally, we had driven over into the Catskills to investigate. The stream—a small feeder that emptied into the Upper Beaverkill—had been a disappointment. For the most part it was heavily overgrown, unsuitable for fly fishing and productive of trout that were too small to be of any interest, except perhaps to the game warden. Eventually we had given up the search for the portion that "flowed through an open meadow—deep pools with undercut banks and big trout" and pointed the nose of the car toward home. Another day wasted!

As we approached Cook's Falls, we saw two cars parked on the bank of the Beaverkill beside the Island Pool. Four fishermen stood at the edge of the road, chatting and having a round of steaming coffee from a generous thermos jug. We waved a greeting and would have passed had my eye not caught a glimpse of some fish on the running board of one of the cars. Hastily I stopped my car and threw the gears into reverse.

My friend and I stood before that catch of trout and gazed at them, speechless with envy and admiration. Seven fish, the smallest

fifteen inches and the largest twenty-one! They had been neatly arranged according to size, and all were fresh-caught and glistening in the fading light of the April afternoon.

"Nice, ain't they?" said a voice behind us.

"Nice!" I repeated. "They're magnificent." I turned to look at the speaker. "Do you mind," I asked him, "telling me what fly you took them on?"

"Mind?" he said, smiling. "Certainly not. It's no secret. We got 'em on Quill Gordons, number twelve, dry."

That was the first time I had seen John Burns. Short, stocky, and with a genial smile on his round face, he fairly radiated health and good cheer. In later years I came to know him well, and my first estimate of him as a man worth knowing was never changed.

At that particular moment, however, he had more to interest me than mere personal charm. Trout-fishing methods and gear had improved during the war. The dry fly was becoming better known and its use less of a mystery. My time having been fully occupied for several years with the Navy, I had not had an opportunity to acquaint myself with this new method. And here before me stood a man who not only had complete dry-fly equipment but who knew how to use it. The evidence lay on the running board.

"Mister," I said earnestly, "I'd give a lot for the privilege of watching you fish one of these days."

John threw back his head and laughed. Then he stopped suddenly and regarded me intently.

"Have you got your tackle and waders with you?" he asked.

"Right there in the car," I replied.

"No time like the present," he said. "Hurry and get rigged up. The rise is about over, but maybe we can pick up a couple."

Tumbling into my waders, I grabbed a rod and reel from the tonneau and followed him down the bank. Together we waded across the shallows at the head of the pool and walked down the far shore until we were opposite the spot where the riffles gave way to the smooth, undulating "run" of good dry-fly water. There John stopped and regarded the pool intently, while I stood at his elbow. As he watched, he talked.

"I always claim," he said, "that it's a mistake to fish a pool blind with a dry fly. You do much better if you know just where a fish lies. If you see one feed—that's fine. You know where he lives and you can go to work on him. If you don't know where the fish lie, then use your 'decoy' and make 'em show themselves."

The "decoy" proved to be a No. 10 wet fly—a Quill Gordon. This fly and its attached nine-foot leader were kept in the moist pads of John's leader box. A careful watch of the pool disclosed no rising fish, so John changed to the wet-fly rig.

While he changed tackle, I questioned him.

"Why," I asked, "is it a mistake to fish dry unless you know where the fish lie?"

"That's easy to answer," he said. "When you fish dry, you cast upstream. Then you let the whole rig—fly, leader and line—drift down toward you. Your fly may not drift with four or five feet of a good fish on your first cast—too far to expect him to move after

it. But your line may drift right over him and scare him—'put him down,' as they say in England. When you *do* drift your fly over him, he won't take. Nope, you do better if you locate your fish first."

"But," I insisted, "why don't you scare them with a wet fly?"

"You do if you're not careful. Best way is to fish the pool a little at a time. Short line first across current and let it swing. Then lengthen a little and cast again. These fish have been surface feeding and they're more apt to take a dry fly. But they'll sometimes come up and take a look at a wet one. Then when you locate a fish, change tackle and go to work on that one fish. Like this."

John waded out knee-deep in the shallows and cast. He allowed the fly to drift "dead," now and then bringing it to the surface by lifting the tip of his rod. Nothing happened on the first drift, so he stripped about three feet of line from the reel and cast again. On the third cast, after the fly had drifted slightly below him, he exclaimed, "There! See that one? He's a dandy."

I had been standing at his left elbow, watching intently, but I had seen nothing that looked like a trout. I told him so.

"Got to learn to spot 'em," he said. "Never look right *at* your fly. Watch the water *under* the fly and you'll see the fish as he takes a look and turns. Now let's see if we can get him."

John marked the location of the trout carefully before wading to shore. Having removed the "decoy," he ran the end of his line through a bandana handkerchief to dry it, and then gave it a quick dressing of line grease with a pocket pad. Next came the moistened

leader, which he fastened to the line. Last came the Quill Gordon No. 12, dry. This was carefully knotted on and oiled.

"Now," he said, "let's see if this big boy means business."

John waded into the stream about forty or fifty feet below the spot where the trout had been located and took a position from which the line had to be cast up and slightly across stream to reach the fish.

"Doesn't pay to crowd 'em," he explained, as though apologizing for the extra casting job he had imposed on himself. His first cast sent the fly about ten feet above, and slightly to the right of, the fish.

"Don't like to lay it right smack on 'em first cast," he said. "Apt to scare 'em. You can cast closer after a couple of drifts."

The "couple of drifts" weren't necessary in this case, however. The big trout waited until the fly had almost passed him. Then he came with a rush, smashed the fly with a vicious strike, and headed for home. The little fly rod bent as John pulled the barb in solidly, and the battle was on. Instead of wading to shore, John made his way to the middle of the river, keeping the fish above him.

"Don't pay to let 'em go below you. Too far to run and you lose too many fish. Get below 'em first and they'll gen'ly head the other way."

Throughout the entire fight, John kept up a running commentary. It was a good fight, but the winner was unmistakable from the start. He was indeed a master angler.

"There he is," said John, as he lifted the trout gently in his net. "That's all there is to it. But, say—ain't it fun?"

The trout proved to be one of about two pounds when he weighed it, still in the net, with a pocket scale. He insisted that I take the fish home with me. When I thanked him and refused, he carefully removed the hook, placed the tired fish in the water, and held it gently until he was sure that it had recovered its equilibrium and could swim without turning on its side. Then, as the fish recovered, we watched it disappear into deep water.

"That's right, boy," he said. "You catch your own fish and let the other fellow catch his. If we'd all stick to that idea, there'd be more fish in our streams. That fellow there," he said, indicating the liberated trout with a wave of his hand, "will be here for you to catch next time you come over. Now it's your turn."

Under John's able and voluble supervision, I tried in vain to duplicate his performance. With the "decoy," I managed to locate a fair fish, but, try as I would, I could not get the trout to rise to the dry fly. As I look back on it, I'm glad that I couldn't. John crammed into that half-hour enough dry-fly lore to fill a book. To have found out for myself all that he taught me in thirty minutes would have taken months or years of study and practice.

John Burns died about ten years later. During that ten years I was lucky enough to spend many days with him on the lower waters of his beloved Beaverkill. From him I learned the unusual and less obvious things of the woods and streams. It is my hope that he now casts his Quill Gordon, No. 12, dry on the crystal-clear waters of the streams that flow down the other slope of the great divide. Thinking about him, I can hear him reply to the Angel Gabriel's query of

GOLD BODIED BROWN VARIANT	BADGER HACKLE	LIGHT CAHILL	GINGER QUILL
FAN WINGED ROYAL COACHMAN	KNIGHT PALMER	WICKHAM'S FANCY	QUILL GORDON
SPENT PALE EVENING DUN	GRAY SPIDER	LEAD WINGED COACHMAN	LIGHT OLIVE QUILL
SPENT WHIRLING DUN	BROWN BIVISIBLE SPIDER	DARK OLIVE DUN	HENDRICKSON
SPENT CAHILL QUILL	GINGER SPIDER	GEORGE HARVEY	DARK CAHILL

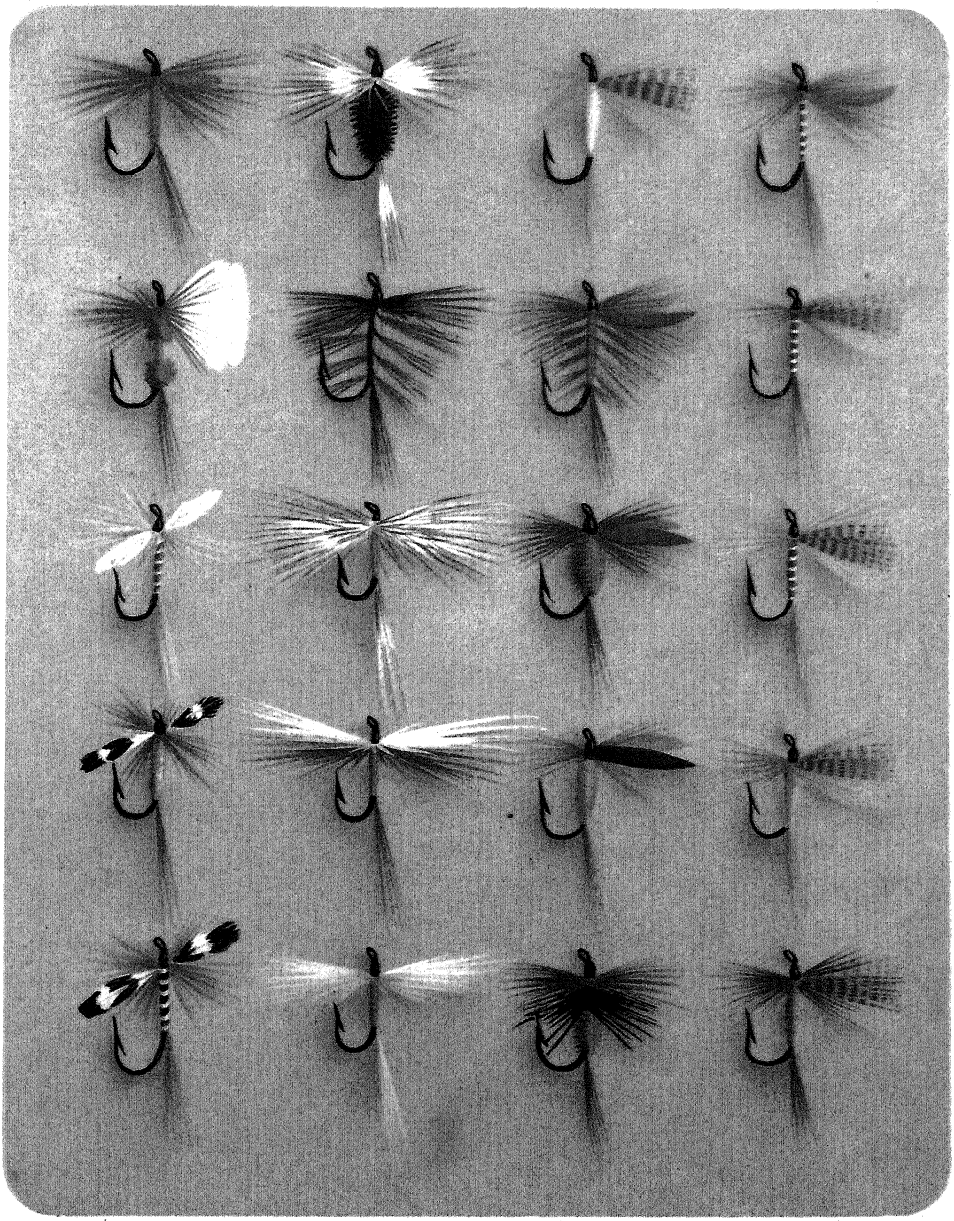


PLATE 4. DRY FLY PATTERNS

"What luck?," "Not so good today, Gabe. Only a couple. But, say—ain't it fun?"

It has always seemed to me that dry-fly fishing is not only the simplest but the most pleasant way to catch trout. With the dry fly, you have the tremendous advantage of being able to see what goes on at all times. When a fish strikes, you don't have to do any guessing; you know it at once because you can see the strike plainly. Once you have learned the knack of false casting, handling a dry fly is in itself a pleasure regardless of what the fish do about it. There is something about doing an artistic job with well and delicately made tools that brings a real sense of self-satisfaction. The pleasure derived from the execution of a difficult cast, placing the fly over, behind, around, and under obstacles, is sufficient for the moment, even if no fish shows its appreciation of your artistry by rising to your fly. I don't suppose that there is any better medicine for injured ego or lowered self-esteem than an afternoon of good dry-fly fishing.

To start at the beginning, the dry fly, which, as you know, is supposed to represent a natural winged insect as it floats on the surface of the stream, must be cast lightly, to allow it to float in a natural manner. The tapered line and the tapered leader have been developed to help you do this easily. The line is kept waterproof and dry by regular applications of line dressing. This should be a combination of mineral grease and light wax, so that the surface tension of the water will not be broken. A non-greasy line dressing, even though it be completely waterproof, does not resist surface tension and thus

does not make your line float well. To ensure floating, the fly also should be dressed with fly oil. This also should have a light mineral-oil base. It is very unwise to use either vegetable or animal fats as line or fly dressing. Good dry-fly oil can be made by dissolving paraffin in gasoline or benzine. Some prefer a mineral oil, such as Nujol, thinned down with carbon tetrachloride. Most anglers are content to use any one of the dozens of preparations on sale at the tackle shops, and I guess that one is just about as good as another. Care should be taken not to get any line dressing or fly oil on the leader, for it is better if the leader drifts just below the surface.

The length of leader to use when fishing a dry fly depends upon the casting job to be done and the type of water to be fished. Remember that the purpose of the leader is a dual one. It is the fine connecting link between the line and the fly. Also, being less obtrusive than the line, the extra length of the average dry-fly leader keeps the bulkier line out of the range of vision of the fish, thus avoiding the possibility of alarm. Obviously, in broken water, where the average cast is perhaps thirty feet and where the trout's sub-surface range of vision is rarely more than three or four feet, a twelve-foot leader is as much out of place as a six-foot leader would be in the shallow, quiet pools or "flats." Some men use as much as eighteen feet of gut, tapered to 4x or 5x, when fishing quiet water. You must learn to suit your terminal tackle to the job in hand.

The fundamentals of dry-fly fishing are not difficult to learn. Briefly, the fly is cast upstream and preferably slightly across. As the fly drifts toward you, take in the slack line through the guides until

the fly is within twenty feet or so of you. Then pick it up, false cast it a few times to dry it, work out most of the slack line, and recast. That's all there is to the actual mechanics of dry-fly fishing.

Of course, there are many things to be learned—John Burns' trick of using a wet-fly "decoy" on big water, for instance. You must learn that it is risky to drop a fly directly over a feeding fish, at least until that fish has become acquainted with your fly and can recognize it as it floats down through the air. A trout sees things with one eye at a time. Consequently, he lacks perspective vision with which he could readily determine the size of an object. A fly falling through the air may be merely that or it may be an osprey fifty feet above the stream. Only when it rests in a fixed position on the surface of the stream, so that it can be compared with other known objects, can the fish be sure of its size and identity. Naturally, he plays safe and takes to cover if the fly falls too close to him.

You must learn to analyze currents to fish a dry fly successfully and without drag. At first it will be difficult to look at a pool and decide on the best position from which to fish it. Only practice and experience can teach you this. You will soon learn to drop your fly at the side of a fast current instead of at its center. It will pay you, if possible, to take a new position rather than to attempt to fish the far side of a fast water run.

After you have put down enough feeding fish, you will learn that a dry fly, to be most effective, should be *kept dry*, so that it will float high on its supporting hackles. I remember one evening when my son—then aged twelve—and I were fishing an excellent piece of

broken water in the Tobyhanna Creek, Pennsylvania. We made our way upstream together and I purposely had given him the better water. Earlier in the day I had tried to impress on him the importance of keeping his fly dry, so that it would drop lightly and float well up. After my sixth trout to his none, he complained that I had given him an inferior fly. Then and there I tied on his leader the fly I had been using and transferred his fly to mine. Sure enough, on his first cast he allowed his fly to be dragged under and drenched. I kept on catching trout with the fly he had discarded until I felt that he had learned his lesson. Then I showed him what was wrong and how to correct the trouble by keeping his fly high on the surface. From then on until dark we both caught fish.

The beginner must learn to fish a piece of water thoroughly and intelligently. If the trout are showing and feeding at the surface, his problem is fairly simple. If, however, he must coax them to rise, then he must learn where to look for fish and not waste valuable time on barren water. Often a difference of a foot or six inches in the line of drift will spell the difference between success or failure. Study the currents and learn where the natural flies drift. This knowledge will be useful when there are no flies drifting. Learn where to look for trout when they are not rising by noting carefully the feeding positions when the rise is in progress.

"Drag"—the unnatural motion imparted to a fly by the pull of the leader in adverse currents—should, as a rule, be avoided. Often, however, it is not possible to eliminate drag completely. When drag is inevitable, many fish may be taken by utilizing drag to make the

insect seem to be alive and trying to rise from the surface. This can be done by varying the speed as the fly drags across the surface. Twitch the rod tip and make the fly dance and skip as though it were trying to take wing.

It is not wise to adhere strictly to the orthodox method of dry-fly fishing. Frequently, orthodox methods do not apply. I know one man who twists the wings of a fan-wing fly now and then in order that it, in turn, will twist the leader as it is false cast. When the fly alights on the surface, the leader untwists, making the fly turn over and over, as though it were a crippled insect. This procedure will ruin a good leader very quickly, but it will sometimes take fish when other methods fail.

Under some conditions it is possible to fish a dry fly downstream quite effectively, although as a rule this is not an advisable practice. The pick-up of the line and leader, after the fly has passed the fish, creates such a disturbance on the surface that the downstream method is reduced usually to a one-cast-per-fish affair. However, circumstances sometimes arise which make it necessary.

One evening, while I was fishing the lower Brodhead of Pennsylvania, I had taken my position at the tail of a long, quiet pool—"flats," we call them in the Poconos. I had been concentrating my efforts on a trout that looked like a two-pounder which had been feeding at intervals under some overhanging brush. Extreme care had to be used to cast *close to* but not *in* the brush, as the slightest disturbance caused by pulling a fly free of the brush would probably alarm the fish under it. While I was false casting, I heard a fairly

sizable splash directly behind me. Keeping the fly in the air, I turned my head and saw the unmistakable ring made by a feeding fish. The trout had taken its position about thirty feet below me in water not two feet deep. I knew that if I altered the position of my feet, the fish would take alarm and be gone. Evidently he had accepted me as a part of the natural scenery, but any sudden or unusual move on my part would most surely frighten him. There was nothing to do but shorten line while false casting and let the back cast settle to the surface about six feet above the fish. Then I lowered the rod tip and fed line through the guides so that the fly would drift naturally. Fortunately, the trout took the fly immediately and I did not have to worry about alarming him with the pick-up of the line.

There is a section of the Brodhead where the stream has cut its way through ledge rock. The ledge formation has been tipped up sideways and therefore much of the stream is a series of deep pools and tiny falls. If you attempt to fish these pools from below, your line is caught immediately by the falls at the lower edge of the pool, the fly is jerked across the surface in a pronounced drag, and then pulled under almost before you can retrieve it. Consequently, to fish these pools you must fish from the side and slightly above.

Another way to fish a dry fly downstream is the deplorably unorthodox method known as "bump casting" or "skittering." The primary requisite for this method is a bushy, high-floating fly, preferably one of the bivisibles. The fly is cast across and down with a fairly short line. Just before it strikes the water, the rod tip is raised to let the fly's line of fall slant slightly toward you. When it strikes

the water, it will skip once or twice before coming to rest. Then, as the current swings it across stream below you, the fly can be "kept alive" by twitching the rod tip. This method is rather tiresome as a steady diet, but it often will produce fish.

There is one mistake that is made by entirely too many anglers when they are fishing a dry fly. Since it is customary to fish the dry fly mostly on water that is moving fairly rapidly, unconsciously, in the mind of the angler, the dry fly becomes directly associated with movement. This is wrong. If you allow yourself to fall into this way of thinking, you will find yourself avoiding the still waters of your streams which are often the most interesting to fish and the most productive.

Consider for a moment just what happens when a trout takes a dry fly in fast water. As the fly drifts with the current, the trout rises under it, tips up his nose, and takes it. *At the time of the actual taking*, the trout and the fly are both being carried by the current at the same rate of speed. Thus, as far as the trout is concerned, the fly at that particular moment is relatively motionless, just as though it were floating on still water. With that in mind, it is just as well to consider the possibilities offered by the still-water pools. A large, deep, still pool nearly always holds big fish. These fish will feed if the offering looks tempting.

One summer while I was visiting my old home in the Pennsylvania mountains, I was invited by a friend to fish a stream owned by his rod-and-gun club. We had been fishing "ride-and-tie," alternating pools, when we came upon a shallow, flat pool formed by the remains

of an old dam. As we approached it, I said to him, "It looks like those overhanging bushes over there on the far side ought to be good cover for trout."

"They are," he replied. "There are some old dandies in that pool, but they won't take a fly. They run for cover as soon as you step into the pool."

"Wait a minute," I urged. "We've all afternoon ahead of us. Let's see if we can't get a fish out of there."

"Try it if you want to," he said. "I never waste time on this pool. I'll sit here in the shade and watch."

While he lit his pipe in the shade of the trees and made himself comfortable, I waded out into the middle of the pool. The water came about to my knees and every step sent a wave ahead of me to announce my approach. When I reached the spot from which I could cast easily to the head of the pool, I fixed my feet comfortably on the bottom and did not move them again. After lighting a cigarette, I removed the shorter leader I had been using and fastened on a new twelve-foot leader, tapered to 4x. Next I greased the lower part of my line with a pocket pad. Then I took a sparsely dressed brown-and-gold variant from my box and knotted it to the leader. All this took about ten minutes.

The stream flowed into the head of the pool from the side, throwing the current against the far bank. In taking my position, I had purposely stopped about fifty feet from where the main flow of the current made its way across the pool to the far shore. False casting carefully, lest my body should rock with the casting motion and make

more waves, I dropped the variant midway in the main flow of current and about fifteen feet from the far shore. Then I waited. There sat the line, leader, and fly in plain view on that quiet water. Nothing happened. It took the fly perhaps five minutes to drift across the pool. As it came near the overhanging bushes, the surface of the pool was broken by a slight dimple and the fly disappeared. Carefully, for I was using fine gut, I raised my rod tip and tightened. Instantly the pool was in turmoil. My friend ran down to the edge of the pool and, as might be expected, shouted advice. Eventually, after a splendid fight, I laid at his feet a golden brown trout just eighteen inches long that later tipped the club scales at two and one-half pounds. After the excitement had quieted down, my friend sat down on the bank and scratched his head.

"And just think," he said. "I've been walking by that pool for the past ten years without so much as dropping a fly in it. From now on it's going to be different."

You will find, as the years pass, that your dry fly fishing will narrow itself down to the use of five or six favorite patterns. Some anglers go so far as to use only one pattern in varying sizes. While this may simplify matters, I feel that it savors too much of stylism, which, in my opinion, should be avoided. If you adhere to one method, one fly, and one style of casting, you inevitably limit your development. Then, when you are confronted by an unusual condition such as a well-established but unusual hatch of flies, a different problem in casting to an inaccessible spot, or a variation from the ordinary feeding behavior, you are not equipped to handle the situa-

tion unless you have a well-rounded kit, a well-trained casting hand, and a sound background of varied experience. Limit yourself as to fly, method, or style and, automatically, you limit your enjoyment. Approach your angling with a willing spirit and an open mind. In that way you will find much to learn each day you spend on the stream.

Chapter 10. STREAM TACTICS

General Discussion

UNTIL recently I had always taken wading more or less for granted. It had never occurred to me that there might be a knack or trick to keeping yourself right side up in a trout stream. Consequently, I was somewhat surprised at hearing a remark made at the luncheon table one day. The speaker was a man of about forty-five who only recently had taken up fishing. He was discussing the construction of a new and better wading staff—an item that I have always regarded as excess baggage. I asked him why he used a wading staff in the comparatively friendly streams of the Catskills and the Poconos.

"I can't wade," he replied. "Every time I put my foot in a trout stream, I fall down. I suppose it's something you have to learn when you're a boy. Anyway, without a wading staff, I'm practically sure of getting wet before the day is over."

That set me thinking. I know certain men who are confirmed "faller-inners." These men are not clumsy. Some of them were good athletes in college, well-coördinated and sure-footed. Yet they habitually fall down in trout streams. In other words, they have never learned the knack of wading.

The first thing a man must learn about wading is to walk with the knees slightly flexed. A sure way to fall down in a stream is to stride over the rocks with the same full step one would use on dry

land—heel down first, with the knee straight. If you step out confidently, throwing the weight on the forward foot as it meets the stream bottom, and that forward foot happens to slip—well, you are in for a wetting. Keep both knees slightly bent all the time you are in motion. Walk with your feet wide apart, as though you were wearing snowshoes. Keep the weight on the foot that has found a firm grip on the bottom while you advance the free foot. Make sure that the forward foot is firmly fixed on or between the rocks. Then shift your weight and bring up the other foot.

It is downright folly to jump from rock to rock. Some years ago a friend of mine was fishing the Ausable of New York State. He was in the lower river, where the going is notoriously bad, and to save time, he was jumping from the top of one boulder to the top of another instead of wading between them as he should have done. Eventually his foot slipped. Some time later he regained consciousness, to find himself lying half in and half out of the water. A large "goose egg" showed where he had struck his head against a boulder. Only by great good fortune had he tumbled toward shore instead of away from it; otherwise, he might well have been drowned.

Every year, I write three or four letters to a man I have never seen. The letters are long and filled with tales of the rushing waters and the singing reel. In them are pictured the highlights of the season, so that he too may do some fishing through the experiences of another. It is the only fishing he will ever do, confined as he is to his wheelchair because of a spine broken while jumping from the top of one boulder to the top of another.

Five days of heartbreaking search—days of hope that we would find that for which we sought and the constant dread of the actual finding—taught me to beware of high banks. Eventually we found him, broken rod still clutched in his hand. The caved-in bank above the deep pool where my friend of many years had lain all those dreary days told the story as plainly as though he himself could tell it. He had been standing at the top of the bank, looking at the pool. His heel prints were quite plain where his wading brogues had left two parallel grooves in the soft topsoil as the bank caved in beneath him.

There is no famous trout stream that does not have its sad story to tell. And sadder still is the thought that these stories could not be if their leading characters had not broken one of the cardinal rules of wading. If this man had avoided wading in fast water above a deep pool, if that man had waded around the boulder instead of attempting to jump to its top, if the other fellow had refused to wade in unfamiliar pools while the water was too cloudy to see the bottom—then these stories could not be told. It is so easy to play safe.

But that is only part of the story. The way a man wades and, equally important, *where* he wades both have definite bearing on his fishing. While I wear breast-high waders even when fishing the smaller streams, I always try to stay out of the water as much as possible. Waders are worn in order that the angler, to cast to his fish, may be free to take any desired position, in or out of the stream. It does not necessarily follow that he must spend the greater part of his day up to his waist in water. Disturbing trout water by reckless wad-

ing does far more damage than the average angler might suppose.

Each spring it is my privilege to fish the stream that flows through the valley of a large estate in the Catskills. The stream is seldom fished and the constant supply of native-born trout that migrate up from the parent river makes the fishing almost too good. Every pool and run is filled to capacity with "wild" fish (as compared to the hatchery variety). It is not difficult, if the weather is fair and conditions are favorable, to take fifty or sixty fish before lunch. Usually all of these are returned, as we prefer to take home only a few of those that have been fresh caught during the evening hours.

One day when we were fishing this stream, I decided to look over some of the lower water, with which I was not familiar. That section of the stream proved to be unattractive, so after an hour's fishing, I walked up the bank and started fishing where my friend had started perhaps an hour or so before. The first pool—usually filled with trout—did not even net me a rise. The next pool was no better. Pools from which I could usually take five or six fish were totally unproductive. In nearly two miles of stream, I managed, by dint of great effort and careful fishing, to take three small trout.

My friend, when I joined him at noon, told me that he had had the excellent fishing one could normally expect in that stretch of water. Not knowing that I was behind him, he had been careless in wading through the pools after he had fished them. The disturbance he had caused had ruined the fishing for at least two hours after he had left the water.

An excellent example of the effect of disturbance on the fish-

ing can be seen readily by examining the yearly records of the Fishermen's Paradise at Spring Creek near Bellefonte, Pennsylvania. This project of the Pennsylvania Fish Commission comprises about two and a half miles of stream. The area has been fenced off, and to fish there, the angler must register at the gate. The stream is heavily stocked with trout ranging from half a pound to twelve pounds—thousands of them. Wading is not permitted. A man who puts his foot in the water is subject to arrest. During the season of 1938, eight thousand two hundred fishermen registered at the gate. These men, fishing in heavily stocked waters for hatchery-reared trout, caught only seven thousand four hundred fish. The only disturbance permitted is that of repeated casting and the landing of fish, yet that alone was enough to cut down the average catch to less than one fish per man.

Too many anglers make the mistake of wading up the middle of a pool when fishing it with a dry fly. It is much better to keep to the side. By making it a rule to keep close to the bank on the side of the stream less apt to hold trout, you will alarm fewer fish as you make your way upstream. Wading up the center of the pool means driving frightened fish before you, and there is no better way to spoil the fishing than to send a scared trout scurrying for safety through a school of feeding fish. By keeping to the side, you are just as apt to drive such fish as you may disturb downstream instead of up, and, if the stream is large enough, you will pass many fish without alarming them. Then, as your fly drifts down toward you, it is often wise to allow the drift to continue until the current begins to swing the

fly across below you. By raising the rod tip and varying the speed of the drag, you can make the fly skip and dance on the surface as the current swings it across the river. Many times a trout will be picked up in this manner after it has refused to pay any attention to a dry fly that drifts like a natural insect.

Frequently it is desirable to spend considerable time on a particularly attractive piece of trout water. After the pool has been fished throughout its length, it is better for the angler to go ashore and sit quietly on the bank for a while before fishing the pool again. "Resting the pool" makes for better fishing than fishing the pool continuously. Naturally, if the angler has used care in his wading, he need not rest the pool long until good fishing may again be expected.

Too much emphasis cannot be placed upon the importance of wading slowly and with the absolute minimum of noise. A cautious, deliberate wader can take trout with a surprisingly short line. Motions made with the arms and body should also be slow. Nature has taught the fish to distinguish between "friendly" and "unfriendly" motion, and quick or sudden movement is regarded with suspicion by the trout.

The matter of just how far a trout can see and just how he sees has been the subject of endless debate for many years. All manner of theories have been set up and knocked down again. Can or cannot a fish distinguish color? At what distance can an angler cast to a fish without being observed? These and many other phases of the eyesight of fish have been discussed to the point of exhaustion. From what I have been able to learn, the whole eyesight problem is a tem-

pest in a teapot. After all, what do we need to know about the eyesight of a fish in order to angle for him successfully?

We know that trout and other game fish do distinguish between fly patterns. I don't think that we will ever be completely sure as to why this is so. Until then, the practical angler accepts the fact and carries a suitable assortment of fly patterns in his kit. As to the visibility of an angler, a lot of factors make this question a variable one. It seems to me that the best solution is to answer it in terms of our own eyesight. In other words, if you can see the stream bottom plainly ahead of you where you are casting your fly, it is a pretty good bet that the trout in that vicinity can see you. Light conditions and the character of the water being fished alter this rule somewhat from time to time, but it is a good general rule.

The angler should keep constantly in mind the effects of light. If he takes a position where he is silhouetted sharply against a bright background of sky, it naturally follows that he will be more visible than if his background is a dark hillside or thick foliage. Bright, shiny, or light-colored objects reflect more light than does dark clothing. It is one of the rules of physics that the angle of incidence equals the angle of reflection. Keep this in mind when the fish lies between you and the sun. It is always preferable to fish a pool with the sun at your back, providing that your shadow and that of your rod do not fall near the fish. Ripply water does much to aid the angler in the matter of light, for the ruffled surface cuts down visibility.

Trout often feed in some very surprising places in a stream. For the most part, a fish stays pretty close to his resting station, where he

finds comfort and security; in other words, his home. During most of the feeding periods, he takes a favorable position near by, where he can reach the maximum of drifting food with the minimum of effort. Sometimes, however, the type of food that is present at the moment makes the choice of a different feeding station necessary. If the angler is wise, he will take advantage of these times.

By way of illustration, there is a small green worm that puts in its appearance on our streams in late May. This worm, known variously as "inch worm," "oak worm," and "leaf roller," spins its cocoon in the leaves of several of the hardwood trees of the Catskills and Poconos. Sometimes, dissatisfied with its place of abode, it will suspend itself on a long strand of silk and hang there in the hope that the wind will blow it to another tree. When these worms are numerous over a stream, the trout ignore other types of food and take up their feeding stations close to the banks and bushes where the supply of oak worms is most generous. A dry fly, fished over the usual feeding runs, is productive of nothing save exercise on the part of him who insists on sticking to orthodox methods and ignoring unusual conditions. On the other hand, a small piece of cork, of the general size and shape of the green worm, that has been bound to a No. 12 hook and painted light green will work wonders when cast near the banks and bushes, or, better still, "dapped" on the surface in much the same manner as the live worm is "dapped" while hanging by its gossamer thread.

The "flats" in a trout stream—those long, shallow expanses of quiet water, usually at the lower ends of the larger pools—deserve

much more attention than is usually accorded them. Throughout the bright, sunny hours they are often quite empty of fish, but during the darker hours of dawn and dusk they are the chosen feeding places of large trout. To fish a flat successfully, the angler should take a position from which he can reach as much as possible of the water without moving or changing location. The fish, which are cruising, will come to him. With the large trout it is not difficult to mark the direction of progress and cast the fly so that it will rest directly in the path of the feeding fish. When possible, it is better to place your cast at least ten or fifteen feet ahead of the fish, since they are unusually alert and wary when cruising in shallow water and take fright quite easily. If the fly is cast lightly some distance ahead of them, they will usually swim up to it and take it quietly, just as though it were a natural insect. Flat fishing is an absorbing and productive way to spend an evening when the big trout are cruising.

It must be remembered that the riffles in a trout stream hold approximately 75 per cent of the available food in that stream. Thus the majority of the fish feed in or near the riffles. Insect hatches, at any rate most of them, originate in the riffles, and the fish that have their resting stations in the deep water of the pools will make their way into the shallow riffles to feed on a drifting hatch. It is not uncommon to find large trout feeding in riffles barely deep enough to cover the dorsal fin when there is an established hatch of duns drifting down from the broken water.

Fishing the riffles successfully is a study in itself. Because of the character of the water, it is not practical to use a long line. For this

reason, better results will be obtained if you fish upstream, regardless of the type of terminal tackle you are using. Dry fly, wet fly, nymph, streamer fly, or bucktail will all give you far better sport if, in the broken water, you fish them upstream with a short line.

The trout in the riffles and "pocket water" are usually easier to take than those in the pools. These fish have a comparatively limited range of vision. For their livelihood, they depend mostly upon what is brought to them by the current. Owing to the speed of the current, they must decide almost instantly to take or reject a fly as it drifts past them, and usually they are less selective than the fish that can inspect a fly at their leisure. To maintain their position in the current, the trout in the riffles must lie with their heads upstream, and the angler may approach them quite closely from below and still remain undetected. When the trout are not feeding actively and you want a mess of fish to take home, it is a good plan to concentrate on the riffles and pocket water.

Because of the limited range of vision of trout in the riffles and also because your riffle fishing is done with an unusually short line, it is better to use only six or seven feet of leader. Long, fine leaders, which are really a necessity in the deeper, quieter waters of the pools and runs, are next to impossible to handle in the riffles. Care should be taken to keep the rod as close to the water as possible at all times. Horizontal casting not only alarms fewer fish but also reduces the number of complications with branches and twigs that are just high enough to be out of reach. I have never seen an angler who will not, sooner or later, become involved with overhanging branches if he

persists in using the overhead cast in restricted quarters. In the larger areas of the open pools and runs, the high back cast is much to be desired, but in the comparatively confined spaces of the riffles and "pocket water," horizontal casting is more sensible.

The beginner all too frequently lays too much stress upon the importance of being able to fish "fine and far off." To be sure, an angler should be able to throw a long line lightly and accurately when the occasion demands. Fishing the shallow flats during the evening hours requires a finished casting hand, and the fellow who can't handle sixty or seventy feet of line had best stick to the faster water. But in most trout waters, the long line is not needed often. Delicacy and accuracy are far more important. I know several men who literally cannot cast a fly more than fifty feet; yet, when it comes to taking trout, these men will compare more than favorably with the topnotch tournament caster. The ability to place a fly where it will do the most good, combined with a sound knowledge of stream insects and trout lore, will get you many more fish than the ability to throw a long line. As a matter of fact, it is a good rule never to use a longer line than the circumstances of the moment demand. With the short line, you can see exactly what is happening at all times. You can hook and play your fish more easily and it makes for pleasanter and less tiring fishing.

It cannot be too strongly stated that familiarity with stream-bottom insects will pay dividends. It is not essential that you take up the study of entomology and learn the generic names of the various varieties. In every stream there exists a series of insect hatches that

predominates throughout the season. This series of hatches is accompanied by an annual cycle of color change of the insects themselves that is more or less standard throughout the country. To illustrate, the first hatch of any importance to appear on the Eastern trout streams is the Blue Quill. This is followed by the lighter blue-gray Quill Gordon and the Dark Olive. There are, of course, other scattered hatches, but these three are the outstanding ones prior to the first of May. Then the Hare's Ear and March Brown come along, closely followed by the Whirling Dun or Dark Cahill and the famous Shad Fly hatch of the Beaverkill River. As these hatches follow each other year after year, so does the color cycle progress from dark blue to light blue and olive; then to dark brown, medium brown, and, as June arrives, to tan, buff, and the "honey dun" of the Flights Fancy, Light Cahill, and Pale Evening Dun.

A little time spent in turning over the rocks in the riffles and backwaters will tell you a lot about the nymphs from which these hatches emerge. This information will come in very handy when you are trying to match your fly to a developing hatch of duns. It won't take long for you to identify a nymph with its corresponding dun, at least so far as the more common hatches are concerned. The insects that hatch nocturnally leave the telltale cases on the rocks, banks, and trees. You can find the adult flies taking refuge in the bushes and trees near the stream, where they await the coming of evening and the hour of the nuptial flight. If, on inspection of the foliage near the stream, you find a surplus of one particular type of insect, you had best have a supply of the artificial counterpart with

you before evening comes, as that will be the fly you will have to match when the sun goes down.

Of course, all this extra information is not essential. You can probably take enough trout by chuck-and-chance-it methods without going to the trouble of familiarizing yourself with stream insects. Goodness knows, plenty of anglers go through life without ever learning to tell a Quill Gordon from a March Brown, and they all seem to catch enough trout to keep them happy. But if you want to get the most fun out of your fishing, the more you know about it, the better chance you give yourself.

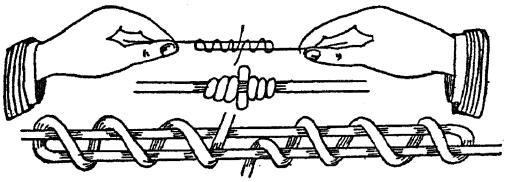
Chapter 11. LEADERS AND HOOKS

IT has always seemed to me that too little attention is given to the quality of the terminal tackle we use. Of course, a good share of this neglect is attributable to lack of knowledge, but even granting that, sportsmen are not as a rule fussy enough about the tackle that goes on the end of the line.

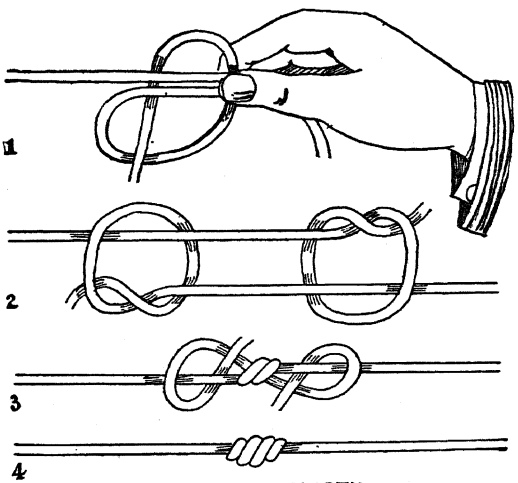
Take leaders, for instance. I doubt if one angler in fifty can tell you the commercial names of the various sizes of silkworm gut, much less tell you what these sizes mean in diameters in thousandths of an inch. They cannot tell you what constitutes good gut or poor gut. In other words, to most of them a leader is just a leader. They have to depend upon the reliability of the maker whose name appears on the envelope, and that is not always entirely satisfactory.

In the first place, good gut should be round. If there are flat spots in any strand of a leader, you are buying inferior gut. The reason for this is fairly obvious. Round gut will bend in any direction with equal facility. Flat gut, on the other hand, will always tend to bend the same way. The flat strand, when it is new, may be just as strong as round gut of the same size, but repeated bending, always in the same direction, will weaken the strand at the flat spots so that, after several hours of casting, it will break comparatively easily.

In the summer of 1938, my wife, my son, and I spent three weeks at Echo Lake, Vermont. There is excellent bass fishing at



"BLOOD KNOT"



"SMOOTH KNOT"

THE "JAM KNOT" ATTACHMENT FOR EYED TROUT FLIES

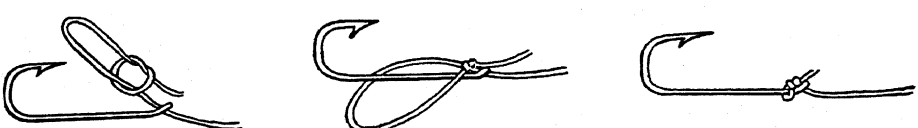


Fig. 1 Fig. 2 Fig. 3

THE "TURLE KNOT" ATTACHMENT FOR EYED TROUT FLIES

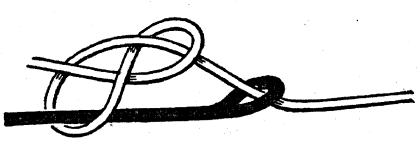


FIGURE EIGHT KNOT FOR SALMON FLIES

PLATE 5. USEFUL KNOTS

Echo and the nearby lakes, and bass are rough on leaders. My stock was running low, so I tied some fresh ones from a supply of surgical gut which had been brought to camp by one of the guests who is a doctor. The gut was manifestly third- or fourth-grade gut, quite uneven and not at all round, but, as it was heavy and tough, I tied some leaders of some of the more uniform strands. I felt that the extra weight would compensate for the poor quality.

On the afternoon of the day before we were scheduled to leave camp, our host and I were fishing in a pond which we knew held big bass. During the evening feeding period, a fish which was without question the bass of my dreams, rose to my bass bug. Unfortunately, he came short and swung just under the bug, but looked to be a foot wide as I caught a glimpse of him in the clear water, and he left a swirl on the surface the size of a kitchen table. We rested him for a while before casting over him again, but apparently he was through for the day. Reluctantly, we left him and returned to camp.

While talking things over that evening, the conversation always returned to conjectures as to the probable weight of that big bass by the pump house. I estimated him at not less than seven pounds. My host insisted on eight pounds or better. Finally, the lady of my choice (who, on occasion, is a woman of rare and uncanny perception) broke into the conversation.

"My dear," she said—that's always the danger signal when she starts like that—"why don't we put off our journey for a day so that you can go back and get that big bass?"

I brightened considerably and tried to express my appreciation of her unselfish thought.

"No," she said, "don't thank me. It's purely selfish on my part. I can't bear the thought of living with you all winter and hearing you weep and wail about being *dragged* away just when you had found the biggest bass in North America."

So we stayed another day, and the following afternoon found us on the same pond. We kept away from the pump house during the afternoon so that the big fish would not be disturbed. A feeding period was scheduled to begin at about eight-thirty—just at dusk—and that was the time we set as Mr. Big Bass's zero hour.

For the afternoon's fishing, I had discarded the leader of the day before and had substituted one of the new ones tied from the surgical gut. When I fastened it to the line, I tested it and found that I could not break it with my hands. It seemed sturdy enough to serve as an anchor rope.

We fished more or less casually during the afternoon. Our efforts were rewarded by the taking of twelve or fifteen fish, but a paltry three-pounder had little interest for us, knowing, as we did, of the monster that lived under the pump house. Finally the zero hour drew near. To minimize noise, my host shipped the oars and seated himself in the prow of the boat with a canoe paddle. I took my position in the stern, rod in hand and decks cleared for action. Silently we drifted within casting range of the home of the big bass. It was nearly dark by this time and the hush of the evening was broken only by

the persistent call of a whippoorwill and the occasional faint splash of a feeding fish.

Signaling my friend to check the progress of the boat, I false cast the bass bug, not allowing it to touch the water, until I had the distance exactly right. Then I cast—perfectly. The bass bug dropped to the surface of the pond with a light "plop," just enough to attract attention, and the ring caused by its disturbance of the placid water spread to a diameter of about six feet before I twitched the tip of my rod. As the bug came to life with the pull of the line, the big fish rose. No short strike this time. He came slanting in from the side and smashed that bass bug with all the power and drive that was in him. Then I struck—solidly and hard so that the barb would surely be set. Bass and bass bug disappeared, and the line, with half of the leader trailing from it, sailed over my shoulder and fell to the water behind me. The leader, tied with flat gut, had weakened with the afternoon's casting and let go at the critical moment.

I set my rod down in the boat beside me and indulged myself in some personal recrimination reminiscent of the days of the steelworks and the United States Navy. Later, my host complimented me on a very fancy job of cussing, but just then he had the good grace to say nothing. Sadly we packed our gear and returned to camp.

Stored among my archives is a letter from my friend which arrived some two weeks later. It says in part:

"A guest at camp—a fellow who had never fished for bass before this year—got your pump-house bass last week. After he had learned to cast well enough, we went up there and he hooked him on the

first cast. He weighed nine pounds four ounces. We aren't very good guessers."

That is not an isolated instance. A friend of mine saw a man lose the only steelhead, a fine fish of perhaps twelve pounds, that he had been able to raise in the Umpqua River in two weeks of fishing. He lost him because he had used the same leader every day of his visit. Three thousand miles out to the West Coast and three thousand miles back just to get some steelhead trout fishing, and then a lost fish because of his reluctance to use a new leader, at a cost of about one dollar per day, each time he fished. It doesn't make sense.

When you buy leaders have a micrometer and a strong glass with you. Check the taper and the diameters from top to bottom. Examine the strands under the glass, to be sure that the "flats" at the ends of the strands have not been tied into the knots. Make sure that the gut is round and of uniform color and consistency. Then you won't be sorry when you put that leader to the test.

It is a pretty good rule not to return a leader to your leader case once it has been wet. You can keep it in the leader box between damp pads all season without harming it, but if you use it and then let it dry, it will usually become brittle. Use a "leader soak" preparation on the pads of your leader box or pouch to keep out mold. Any of the ethylene-glycol compounds will do the trick. Easier than that is a mixture, fifty-fifty, of glycerine and water, enough to make up a tumblerful. Then add a tablespoonful of sodium bicarbonate (baking soda). This combination will keep your leader box clean and sweet all season.

As a matter of interest, the following table will give you the commercial sizes of gut with the corresponding diameters:

Size	*Diameter in thousandths of an inch*
Hebra	.021—.022
Imperial	.019—.020
Marana—1	.019
Marana—2	.017
Padron—1	.016
Padron—2	.014
Regular	.013
Fina	.012
Refina	.011
Refinucia	.010
1X (drawn)	.009
2X "	.008
3X "	.007
4X "	.006
5X "	.005

Another surprising blind spot with most anglers is the lack of knowledge concerning the hooks they use. So often one hears of a large fish "straightening the hook" and getting away. There is no excuse for having a fish "straighten the hook." A hook which has been well made and properly tempered should always outpull the leader on which it is tied. Yet, strangely enough, even the men who tie their own flies persist in using badly tempered hooks. If more anglers would test hooks for temper before buying them, or, for that matter, flies that are tied on them, it's a pretty good bet that before long we would get uniformly better hooks.

Hook points are in two classes—hollow-ground and spear-point, or file point. In theory, a hollow-ground point is one which has been sharpened on a small rotary stone. The inside curve of the point

from barb to tip follows the curve of the wheel. Therefore, hollow point. The better grade fresh-water hooks are made with the points hollow-ground. The advantage is that the former is a finer, sharper point with better penetration and hooking qualities than the coarser spear-point.

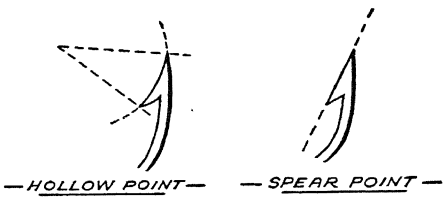
The more common models, or "bends," of our fresh-water hooks are the Sproat, Sneck, Limerick, and Model Perfect. There are, of course, dozens of other models, but the four named are the ones mainly used in tying flies and fresh water lures. Plate #6 will show a comparison of these four bends and the various types of eyes with which these hooks may be equipped. While they are all good, serviceable models, my preference leans toward the Model Perfect because of the depth of "bite." Unfortunately, however, they all have a common fault which is crucial in the smaller sizes—they all are "complete" bends.

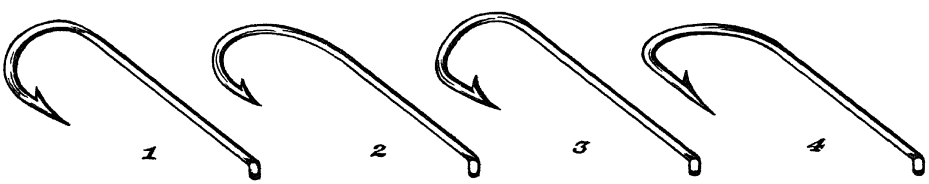
Trout-fly hooks may be divided for convenience into two general classes—the "complete bends" and the "out points." The "complete bends" are distinguishable in that the line of the point, from barb to tip, is parallel to, or in the direction of, the line of the shank. With the "out points," the line from barb to tip is slightly away from the line of the shank. With the "complete bend" type, the force of the strike tends to drive the point through and out, holding in the bend of the hook a section of membrane. With the "out point," the force of the strike tends to sink the point, the offset angle of the point driving it away from the direction of the pull and deeper into the membrane. With small hooks, the "out point" will usually hold bet-

ter than the "complete bend," because the "out point" imbeds itself more and more deeply as the fight progresses. With the larger hooks, however, the "complete bends" are as good or better than the "out points," particularly if there be any chance for side pull or, worse yet, reverse pull while the fish is being played.

One of the most difficult fish to hook—and hold—is the grayling. Having a small and tender mouth, he presents a problem to the angler. Not only does he take the fly daintily, not engulfing it as do our trout on occasion, but his weight and speed are out of all proportion to the tensile strength of the mouth membrane. This is true especially of the Austrian grayling, but I believe that the same also holds good for the Montana and Arctic grayling. Consequently, the "complete bends" are not always satisfactory for use with this fish.

After many years of experiment, the men who, prior to the current war, fished for grayling in the Austrian and Bavarian streams narrowed down their choice of hooks to a model which they procured from one of two English manufacturers of handmade hooks. This bend, for want of a better name, might be called an "incomplete Sproat." Made of oval wire, for strength, the depth of the "bite"—i.e., the distance from the curve of the bend to a line drawn at right angles to the tip—is quite shallow. In addition, the point is unusually short and the bend is not quite completed. In other words, the hook is definitely an "out point." When the grayling takes a fly tied on one of these hooks, the tip, being close to the tail of the fly, is engaged more readily than with the average hook. The strike draws the short point *into* and not *through* the membrane of the lip, thus holding the fish





— FOUR POPULAR BENDS —

1—PERFECT MODEL 2—SPROAT 3—SNECK 4—LIMERICK

PLATE 6. STANDARD HOOK BENDS

more securely than if the point were drawn *through* the membrane.

This advantage of the "out point" does not always hold good, however. Some fifteen years ago, I had some bass streamers of a special pattern tied for me on Sproat hooks. These hooks, having quite short points and shallow "bites," were in reality more of the "out point" variety than I had realized. With them I managed to lose about 50 per cent of the bass I hooked. Something was wrong. Finally, after losing a fairly large fish, I sat down on the bank to think about the matter. Taking a bass from the creel, I inserted the hook through the soft membrane just behind the lip of the lower jaw. With a little maneuvering I found that a sizable hole could be made in the membrane, thus leaving the hook free to disengage itself with the slightest irregularity of pressure. Then I tried the same maneuvers with a Model Perfect bend, which has about twice the depth of "bite." Here the story was different, as the deep "bite" made it difficult to disengage the hook even with direct reverse pressure. Now my bass streamers are tied on Model Perfect hooks and my losses have been reduced to the point of being almost negligible.

There is another factor to consider when choosing between the "complete bend" and the "out point." When using small flies—fourteen, sixteen, and smaller—the fish often will take the fly in such a way that the bend of the hook is held at right angles to the line of the jaws. With the "complete bends," the force of the strike may, and sometimes does, pull the hook right out from between the jaws without having the point of the hook engage at all, particularly if the fish happens to swing toward, instead of away from, you as it

turns to go back to its feeding station. With the "out point" this cannot happen so readily, because the point of the hook pulls off line from the shank. All in all, where the smaller sizes of hooks are concerned, I have found the "out points" the more dependable of the two varieties, both for hooking and holding.

A matter of vital importance to your success in a day's fishing is the sharpness of your hook points. It is a natural assumption that a new hook should also be a sharp hook. This, however, is not always true. Through some maladjustment in the manufacturing process, some batches of hooks will reach the packers with tips well-rounded instead of needle-sharp. As a matter of curiosity, examine the points of some of your new hooks under a strong glass. You will be surprised at the rounded bluntness of some of the tips. By way of precaution, I examine nearly every hook before I place it in the fly-tying vise and, if necessary, bring the tip to the required sharpness with a fine stone. If you will take the trouble to do this, you will find that it pays. And, while you have the glass handy, inspect also the eye of the hook. Often you will find that the end of the wire on one side of the eye terminates in a sharp cutting edge which will weaken your leader point unless corrected either by stoning or by means of a reinforcing shoulder of tying thread when the fly is tied.

In wire as small as that used in dry-fly hooks, it is extremely difficult to have the temper of the hooks always the same. Some are hard to the degree of being quite brittle; others are soft enough to be partially straightened by the pull of a 3x leader. It is remarkable that the manufacturers do as good a job of tempering as they do. How-

ever, when purchasing hooks it is well to have the question of temper in mind. Should the hook be tempered too hard, it will snap quite easily just behind the barb. Should it be too soft, it will bend with comparatively slight pressure of the thumbnail against the point.

In the spring of 1935, I tied a fresh supply of dry flies to be used during the coming weekend. Like the shoemaker's unfortunate children, who usually went without shoes, I suppose that I have fewer ready-to-use flies than nine out of ten anglers. Probably the fact that all I need for a new supply is an hour or two at the workbench encourages procrastination. At all events, I usually find myself replenishing my depleted stock at the last minute before starting on a fishing trip. On this occasion I had tied about two dozen flies. There being no time for extra care, I had opened a new box of hooks and gone to work. The following day I lost a fine fish after having him almost to the net. Inspection of the fly revealed that the hook had been broken just behind the barb. There were no rocks or obstructions that could be reached by a careless back cast and the matter remained a mystery while I tied on a fresh fly. As I finished the job, I noticed the characteristic dimple and swirl of a large trout feeding against the cliff on the far side of the pool. On the first cast, the fish rose, sucked under the fly, and found himself hooked. For the next ten minutes I had my hands well occupied in trying to keep that big trout upstream from me and away from the fast water below. When the fish began to tire, I called to the boy who was with me to come and see a fine trout. He came running up the bank, arriving breathless at the

scene of conflict just as I lifted the trout from the water in my net. His first question was, of course, "What did you take him on?"

I pointed to the fly which had engaged itself among the teeth of the lower jaw—a Light Cahill tied the night before. As we watched, the big trout clamped his jaws tightly together and opened them again—and the fly dropped out of his mouth. After the fish had been admired and returned to the water, I picked up the fly to dry and re-oil it. As I did so, the boy exclaimed, "Look! The point's gone!"

Sure enough! When the trout made that convulsive gasp, the fly had caught between his teeth at right angles between the jaws, and the barb had broken just as though it had been snapped off with a pair of pliers. Then and there I decided to look over the other hooks from that same box. Without exception, each hook, when tested, broke just behind the barb. It would have paid me to have tested those hooks for temper when I bought them.

I suppose that every angler has experienced days on the stream when the fish were "coming short." When fishing with a wet fly, this is a common occurrence. Time after time a trout will take your fly only to pull free on the strike or shortly thereafter. The fish seems to be solidly hooked, and then comes that sickening "click" as the fly pulls out from between its teeth, and the trout is gone. I recall, with little pleasure, one heartbreaking day on the East Branch of the Delaware River. The fish were feeding actively to a developing hatch of Quill Gordons. With a wet Quill Gordon I had no trouble in raising —and losing—twenty-three trout. I applied the usual remedy used to combat a plague of short rises by changing to the next smaller-sized

fly, but I continued to lose trout. Finally I managed to land the twenty-fourth fish and called it a day.

Naturally, there must be a reason for an occurrence of this kind. It could happen once or twice and be charged up to angling accidents or mere coincidence, but to lose *twenty-three* consecutive trout—well, it set me thinking. Almost without exception, the fish were lost with that characteristic "click" of the fly pulling through the teeth. After returning home, I reconstructed the scene on paper to see if I could learn just what had happened mechanically. This is the way it seemed to figure out.

I had been fishing across and down, drifting my fly without any motion imparted by the line; in other words, fishing "dead fly." In this pool, the majority of the fish lie near the far bank and I had been casting a fairly long line to reach them. I used a curved cast, so that the fly would reach the fish ahead of the leader and line, and the fly came to the fish obliquely, tail first. As the trout tilted upward to take the fly, the hook would be taken *flat* between the jaws with the point on the side of the shank toward the tail of the fish. Then, as the trout turned *away* from the bank and *toward* me, the hook, still held flat between the jaws, would be turned by the force of the strike, and the point, instead of engaging, would slide harmlessly out from between the teeth, giving the characteristic "click," and the trout would be free.

At first there did not seem to be any answer or solution to this particular problem save that of just trusting to luck. Then I hit upon what seemed to be a good idea. Taking a No. 12 hook and a No. 14,

I soldered them together, back to back, after removing the eye of the smaller hook. Then I tied a Light Stone with the smaller hook concealed in the wing. When finished, it looked like any other Light Stone as the smaller hook was completely hidden. This creation was placed in the kit until needed.

Not long after that I found the fish "coming short" again, this time on the Brodhead in Pennsylvania. Tying on the Light Stone with the hook concealed in the wing, I kept score on the next dozen fish. Of the next twelve strikes, ten fish were hooked, *eight of them in the corner of the mouth and by the concealed hook.* In other words, the same situation which had existed on the East Branch of the Delaware existed here, with the difference that the fly, instead of pulling free as the fish turned, caught by the upper hook in the corner of the mouth as the fish was going away. I suppose that it is hardly cricket to use a double hook on trout, but once in a while it saves a lot of headaches and regrets.

So long as there are trout fishermen there will be arguments about the proper location of the hook in a streamer fly or a bucktail. Some contend that flies of either the streamer or the bucktail types should be dressed on long-shanked hooks. They maintain that by having the hook near the tail of the fly, fish that strike short will be hooked with the long-shanked hook. Others declare just as stoutly that the hook should be short of shank, so that the point will be located near the head of the fly. They reason that a fish that strikes the fly from the side will hit the head instead of the tail. Experience has shown that both of these contentions are correct. Thus it seems wise to me to

choose a middle course and locate the point of the hook at about the center of the fly. With the long-shanked hook, a fish that strikes at the head of the fly either will be hooked *outside* the lower jaw or, more likely, missed entirely. With the hook located at the center, the chances of hooking the fish are better no matter from what angle the fly is struck.

When all is said and done, however, the location of the hook in bucktails and streamer flies has always savored somewhat of making a mountain out of a mole-hill. Bucktails and streamer flies are, in theory, big-fish lures. They are unpleasant to cast and not much fun to use. I rarely use them except for big fish. So, if a trout is not large enough to take the whole fly on his strike, I'm not going to worry over missing him.

There is one little trick about hooking trout with a dry fly which may come in handy someday. No doubt you have more than once been faced with that curse of all dry fly fishermen—"dimpling" trout. This happens when the fish are feeding on some infinitesimal hatch and the rise consists of an almost imperceptible dimple on the surface as the small insect is taken. The trout will rise to a dry fly at these times, but they will take it in the same way they take the hatch. In other words, they will not take the fly wholeheartedly but merely pull it under the surface by the hackle or tail. The result is missed strike after missed strike and much fire and brimstone in the air. You can improve this unhappy state of affairs by using small flies—twenties or twenty-twos will hook your fish for you, but you will probably lose most of the fish you hook because of the tiny irons pulling out.

The French anglers have solved this problem in dry fly fishing for chub. Strangely enough, the chub of the French streams is a fish highly prized by some French anglers. Don't ask me why. These fish, when feeding on an established hatch of midges, etc., are even more selective than trout. Consequently, they are exceedingly difficult to hook. The Frenchmen, by using small hackled flies without tails or wings and tied on tiny double hooks, not only hook their fish but land them as well. I have tried these flies on "dimpling" trout and have found that the small hooks do hold.

Generally speaking, however, double hooks are not as effective as one might suppose at first glance. After the hooks have been set, one hook acts as a fulcrum by which the other hook may be pried loose. Try it yourself by setting both points of a double hook in a piece of soft wood; a side pull in either direction will loosen one of the points. Should the pull be alternated, as it may well be if the fish happens to be hooked in the front of the jaw, the double hook will "walk" itself free in a short time.

Anglers, as a rule, prefer the straight bends to the offset hooks because the offset hooks tend to pry themselves loose once they have been set. For the most part, this may be true. I find that I prefer the straight bends. A dry fly tied on an offset hook tends to cock slightly off center, and an offset hook with a long shank is apt to lose some fish for you. And yet one of the soundest anglers I know, a man who has killed more salmon in his forty-odd years of fishing than most men have taken trout, has most of his wet salmon flies tied on short-shanked Model Perfect hooks with an exaggerated offset bend. He insists that

not only does he hook more fish but he also lands a higher proportion with these hooks than with any other hook he can find.

For years, the bends of many types of hooks have been reinforced by flattening the wire after the bend has been made. "Forged bend" is the term applied to this process, and, without question, the forging does increase the strength of the bend. In light-wire hooks, however—the hooks on which most of our dry flies are tied—the forged bend has a big disadvantage. If care is not used in the forging, the wire is flattened at the location of the barb. Thus, when the barb is cut and bent up from the wire, there will be quite a definite weak spot just under it. Several of the manufacturers have avoided this defect by constructing their better light-wire hooks of oval wire—a wire the cross section of which is elliptical in shape. In this way the bend is reinforced with less loss of strength at the barb.

When all is said and done, the matter of hooks boils down to the selection of the right hook for the right job. When you find yourself missing strikes or losing fish, the chances are that a little thought about the hooks you are using may remedy your troubles. Carry a hook hone in your kit, so that you can keep your hooks sharp. When in doubt as to the right hook to use, choose the one with the shorter shank. Compared with the rest of your tackle, hooks are not expensive. Thus it seems only logical that the best hook for any tackle problem is the best that money can buy.

Chapter 12. BASS AND THE FLY ROD

BASS fishing is pretty much what you want to make it. If you care to spend the day sitting quietly in an anchored boat or on the bank beside a deep pool while you let your live bait do what work it will for you—well, that's up to you. So far as that is concerned, you can fish for trout the same way if you want to. If, on the other hand, you wish to *angle* for bass, you will find them a completely satisfactory fish and most responsive to your efforts.

The profound disdain with which some of the trout and salmon anglers regard the black bass has always been a sore point with me—at least it used to be. Recently, as I find my old bass fishing haunts more and more encumbered by other fishermen, I begin to feel grateful that all anglers do not prize the black bass as highly as I do. No longer do I exhort the dry-fly enthusiasts to have a try at the black bass. Let them be content with their trout and their salmon. Our good bass waters already are too crowded.

Some years ago I had occasion to visit the State of Maine. The time of my visit was unfortunate in so far as the trout and salmon were concerned, for I had chosen late July for my vacation. After one or two days of little or no success with these fish, I asked my host about the bass fishing.

"Plenty of 'em around," he replied, "if you want to fish for *them* things. But don't bring none home—they ain't fit to eat."

Only his sense of obligation as host made him accompany me to the best pond in the vicinity and he rowed the boat with high disdain while I cast for the despised "mud cats," as he termed them.

While I deplored his attitude at the time, I have come to regard it as a blessing in that it was, and is, typical of all true sons of Maine. Their hearty lack of respect for the black bass fairly well insures the visitor of excellent bass fishing uncomplicated by native competition. My only concern at present is that the anglers of Maine may someday find that they have been overlooking one of the finest sports the state affords. When that day comes, it will mark the end of some of the superlative bass fishing now to be found in the comparatively undisturbed Maine waters.

Black bass are of two principal varieties—the small-mouth black bass, *Micropterus dolomieu,* and the large-mouth black bass, *Micropterus salmoides.* There are several sub-species, such as the white bass of the Middle West and the Kentucky bass, but these are limited in distribution and hence only of local interest. While the two more common species are much alike in appearance, their habits differ considerably.

The small-mouth black bass, though classed as a warm-water fish and entirely comfortable and healthy in temperatures ranging in the eighties, prefers comparatively cool water. He spawns in the spring when the water is from 62 to 67 degrees Fahrenheit, and that is the temperature range he likes throughout the season if he can find it. Mr. and Mrs. Small Mouth are excellent parents when judged by the accepted standards of piscatorial circles. Instead of depositing their

fertilized eggs in suitable locations and allowing their progeny to shift for themselves—a solution of the child-rearing problem resorted to by too many of their neighbors—the nest of the black bass is zealously guarded by both parents until the fry have developed sufficiently to be led shoreward to the security of the shallows and weed beds. That these same parents will relish a meal of bass fry the day after their parental duties have been completed does not detract from the fact that they do a careful and conscientious job of child-rearing during the critical early stages.

The adult bass continue to live in the vicinity of the spawning beds until warm weather compels them to leave the shallows and riffles and move into the deeper waters, where more favorable temperatures may be found. Except for periodic forays in search of food, they keep to the cooler depths until the frosty nights of early fall chill the shallows and make them more agreeable.

Keeping in mind the preference of the small-mouth in his choice of living quarters, the ideal time to fish for him is when he is living in shallow water. It is then that the fly rod comes into its own. During the summer months, while the bass are in deep water, it is difficult to interest them in fly-rod lures except during feeding periods, largely because the lure cannot easily be brought into close proximity to the fish. Unless they are definitely hungry and on the move, bass usually will refuse to rise through fifteen feet or more of water to take a surface lure. In the early season and again in the fall, however, a fly-rod lure that is cast about the rocks and stumps of the shallows or into the pockets and "slicks" of the riffles will be received with

enthusiasm. Since the fish make their homes in these waters through the early and late seasons, the advent of a bass bug or a streamer fly constitutes an invasion of property rights, and reprisals are in order regardless of the condition of the tenant's appetite at the moment. A trout or a salmon takes a fly because it represents food. Not so the bass. He will smash at a lure that may be as large or larger than he is purely because he resents its presence in the water he has chosen for his home, or perhaps because it looks as though it offers an easy conquest. That's what I like about a bass—he has a nice, even disposition: always mad.

Considering the tendency of the small-mouth to retire to deep water during the summer months, the most satisfactory place to fish for him is in water where there is little variation in temperature and where you can cast a fly-rod lure so that it is reasonably sure to fall close to the fish. This happy combination can be found in the shallower bass rivers. The headwaters of large streams, such as the Potomac and the Delaware, offer excellent fly-rod fishing throughout the entire summer. Here the flow of the current maintains a constant temperature from bank to bank, and most of the pools are shallow enough to permit easy wading. In such waters your fly-rod lure lands close enough to the spot Mr. Bass has chosen for his home to be met with active resentment of the intrusion.

Viewed from the standpoint of accessibility throughout the season, the big-mouth is perhaps the more satisfactory of the two varieties. His spawning habits are much the same as those of the small-mouth, but he is not so fussy about temperatures. Spawning season

being over, he will take up his home near a stump, log, rock, or weed bed, usually in the shallow water, where food is readily accessible, and there he will stay so long as there is water enough to cover him. He does not care for swiftly flowing rivers and clean rocks. Instead, he prefers a mud bottom with plenty of weed growth. Temperatures in the high eighties bother him not at all. Only the advent of winter forces him into the deep water, where he spends the chill months hibernating in the mud until the warming rays of the spring sun call him out again.

Both the small-mouth and the big-mouth have a wide diet list; in fact, they are practically omnivorous. They are voracious feeders and will gorge themselves on any food that is readily accessible when they are in the mood to feed. A big-mouth bass will fill up on insect larvae until he fairly bulges. If the larvae adhere to the weeds in which they live, down goes the whole business, weeds and all, and he seems to thrive on the mixed fare. He will leap from the water and take small song birds that are unwise enough to rest on reeds that sway too close to the surface. Crawfish, frogs, tadpoles, newts or salamanders, insects, minnows—in fact, any small creature that lives in or over or that falls into the water is fare for his table. This tendency to sample anything that moves gets him into plenty of trouble; it also gives the tackle manufacturers unlimited latitude in designing new lures. The bass does not hold out for flies and baits that come under the "exact imitation" classification. On the contrary, he seems to prefer a bit of flash and color, with the result that most bass lures are gaudy affairs, resembling nothing he has ever seen before. I believe that it

is this failing, more than anything else, that has brought him into disrepute with the salmon and trout anglers, who adhere rather closely to purist tactics.

While the physical appearance or color of a lure does not as a rule make much difference to a bass, the way the lure behaves in the water—"fishes," that is to say—usually makes a great deal of difference to him. In the hands of a skilled and an unskilled fisherman, the same lure will bring entirely different results. "Heave-and-hope" methods are just as damaging to your success in bass fishing as they are in trout fishing.

It has always seemed to me that most bass fishermen get too close to their fish. A bass is not as shy as a trout and he does not scare easily, but he is infinitely smarter and more wary after he has attained the age of discretion. To be sure, you can catch bass within ten feet of the boat, but you won't as a rule get many *big* bass when you are fishing with a short line.

A good case in point is the West Branch of the Delaware River. In the summer, this stream is low and clear, more like a trout stream than a bass river. The majority of the men who live within fifty miles of this river prefer to fish the main Delaware, below the junction of the East and the West Branches, because they find that they get larger fish in the deeper water. Many of the native anglers scorn the West Branch entirely and spend their time on the Susquehanna River instead, their reason being that the West Branch produces only small bass.

I have fished the clear waters of the West Branch for twenty-

two consecutive summers and I feel that I know the river fairly well. Never does a summer pass but what I become involved with several large bass, and by "large" I mean from four pounds up. I have hooked bass in that little river that have made me look very silly indeed, and I have seen other men do the same. There is no question but what the stream holds its full quota of large fish; the reason it has the reputation of holding only small fish is that the big bass are usually too smart to be caught.

There is one pool in that stream called the Cat Pool. Located in a bend in the river, the current swings over against a rocky bank where the water is normally four or five feet deep. Last summer, a friend and I set out to fish the Cat Pool. Having parked the car, we walked down to the top of the bank only to find another angler in possession of the pool. Somewhat disappointed but curious to see what luck the other fellow would have, we seated ourselves at the top of the bank, where we could watch what happened.

The man was using a fly rod, but instead of artificial lures, he was fishing with small live minnows. These little fellows he kept free of the bottom by means of a tiny cork float fastened about three feet above the hook. As he made his way up through the pool, he cast the minnow up and across and allowed it to drift well down past him before recasting. He began to catch small bass immediately, but no fish large enough to meet legal requirements came his way.

Tiring of watching him hook and release small fish, I glanced upstream and my eye caught the telltale V-shaped wake as a large fish left the rocky shore and made its way slowly toward the middle

of the river. The stream was crystal clear and we, being about thirty feet above the water, had no difficulty in watching the big fish. As the man waded up through the pool, that big bass swam quietly out and around him and disappeared downriver. While we watched, *twelve* large bass—fish large enough to leave a wake in a foot or so of water—swam around the man and went downstream. They were not frightened and they swam slowly, just out of casting distance from the angler. At no time did they allow him to approach within one hundred feet of them. It is not difficult to understand why the average bass fisherman believes that the West Branch holds only small fish.

Not all small-mouth fishing is as difficult as the West Branch of the Delaware. Even that river, when there is an unusual flow of water that will enable you to get closer to your fish, becomes easy to fish now and then. In the lakes of Maine, Vermont, and northern New York State, it is possible to have an excellent day's sport without casting more than fifty feet of line. By and large, however, you will find that casts of sixty or seventy feet will produce more and better fish for you.

Most of the "bass bug rods" on sale at the tackle shops are nine-foot rods weighing between five and six ounces. These rods are quite powerful and will handle a bass bug very well, but they are apt to be pretty tiring on the casting hand in a day's fishing. For my part, I prefer a longer, slower rod. My pet bass-bug rod is not a bass rod at all. It is a grilse rod ten feet long, and it weighs about seven ounces. While it is a little heavier to carry than the average bass-bug rod, it has a slow, easy, powerful action that will throw a bass

bug sixty or seventy feet all day long without placing too much strain on your casting hand. Care must be taken to make your casting conform to the action of the rod. If you attempt to hurry or "fight" the action instead of letting the rod do the work for you, your casting hand won't last more than half an hour at a time. Used properly, this rod of mine is a delightful tool and a great labor-saver.

To have a well-rounded outfit, I use a grilse reel with this rod. Not only does the larger reel enable me to have a better balanced outfit but it permits the carrying of about one hundred yards of backing on the drum under the casting line. The large diameter of the drum speeds up the reeling-in of excess line while playing a fish and cuts down wear and tear on the ratchet when line is being paid out.

So far—and this is written in the late fall of 1939—there has yet to be developed a completely satisfactory line for bass-bug fishing. To make the handling of a bass bug easy, the line should float. Now, it is easy to make a line float if you don't disturb it once it's on the water. Line dressing and the surface tension of the water will take care of that. But, to be effective, a bass bug must not only be cast; it must also be "played." This involves twitching the line with the rod tip, and each twitch of the line tends to pull it under the surface if it is heavier than water, as most lines are. A sinking line pulls the bug under, and when that happens there is nothing to do but recast. Thus each cast must be "fished out" before the line sinks too much, and the result is that you tend to hurry your fishing. That, of itself, is bad.

Last season one of the line manufacturers put on the market a hollow line. Built like a rubber hose and having a hollow center, this line, when new, was actually 15 per cent lighter than its equivalent bulk of water. For the first hour or two the line functioned perfectly. Being lighter than water, it floated like a piece of wood. But, as the hollow construction rendered the braiding slightly elastic, the waterproof dressing gradually developed miniature leaks and admitted water into the hollow core. When this happened, the line would sink like any other line.

The hollow line is such a marked improvement (so long as it stays waterproof) that I finally solved the problem by getting five lines and using them in relays. The wet lines were drying in the sun while the dry lines were being fished. In this way I enjoyed more "line comfort" during the summer of 1939 than I had previously known. But five lines are expensive. It is my hope that in the near future a satisfactory waterproof dressing will be developed for the hollow line.

Many men use level lines for bass-bug fishing, preferring them to the tapered lines. For my part, I like best a tapered line for the bass bug just as I do for trout fishing. The front taper cuts down the line load on the rod and thus gives a little more distance to the cast. The "torpedo head" lines would be good for the job if you could get them to float, but it can't be done. About the most satisfactory line is a regular double-taper that has the rear taper moved up to within about twenty-five feet of the front taper. This means that there is a distance from hand to fly of about fifty-five feet before the end of the rear taper leaves the reel and the lighter "running line" behind the rear

taper rides through the guides with less friction when a long cast is "shot." It also reduces unnecessary line load on long casts.

Many fishermen believe that three or four feet of leader is enough for a bass bug. This may or may not be correct. Without doubt, the bug casts and plays better with a short leader. But I have come to believe that bass are sometimes just as wary of a heavy casting line as trout are. This is not always so, but now and then ten feet or more of fairly light leader will produce bass where four feet of heavy gut would not. It does not seem possible to lay down hard and fast rules for leader specifications. The choice should depend upon how the fish seem to feel about it at the time. Obviously, to set a heavy bass hook in the tough mouth of a bass, stouter leaders are needed than are commonly used for trout. Other than that, it seems better to allow circumstances to govern cases.

It is a hard job to find a completely satisfactory bass bug. To be sure, there are patterns by the score from which to choose. But most of them are made without enough regard for what you should expect from a good bass bug. In the first place, a bass bug should float high on the surface. Why this should be so I am not prepared to say, but the bass seem to prefer it that way. It stands to reason that a bass bug that has been loaded down with layer upon layer of lacquer will not float as high as one that has been lightly coated. It will look nicer, but it won't float as well.

A good bass bug should make some disturbance on the surface when it is "played." That means a wide face, not a pointed one. This wide face presents a problem when one considers that the bug should

be capable of being picked up safely with a long line. A bug that dives on the retrieve is apt to smash your rod and is an exasperating thing to handle.

It should cast easily at any distance; therefore, the weight-to-air-resistance ratio should be such that one just about balances the other. A bug with too much air resistance won't follow through and "turn over" at the end of a long cast. A bug that is too heavy is hard to pick up and places too much load on your rod tip.

Last but not least, the bug should have "fish appeal." In other words, it should take fish.

There are two types of bass bug that will meet all of the above requirements. The first of these—the June Bug—was cooked up several years ago. You will note in the illustration (Plate #7) that the nose is pointed, but the cross-tying of stiff bucktail compensates for this defect and the bug makes a very satisfactory fuss on the surface when it is being played. The body of the bug so closely resembles the June bug itself in color that, in the interests of cutting down weight, it was left unpainted. This bug has been a greater killer for years.

The other type—the Mystery Bug—is a modification of the "popping bug" that has become so popular recently. The main difference between the Mystery Bug—named in honor of Mystery Pond, Vermont—and the average "popping bug" is that the Mystery, with its slightly convex face and rounded edges, will not dive on the retrieve. The bugs with the concave faces *will* dive on the pick-up and are dangerous to use. Both the June Bug and the Mystery Bug will

ride high on the surface and handle very well with all lengths of line.

The most effective way to fish these bugs is to cast them along a shore line where the bass make their homes. This gives the bug a double appeal. If the bass happens to be hungry, he will try to make a meal of it. If not, there is a good chance that he will resent having his territory invaded and will take it upon himself to repel the invader. If possible, I always try to choose water where the bass *live* when I am fishing a bass bug. It is usually more productive than are the open waters of the feeding grounds.

For the past two seasons I have spent two weeks or so each year fishing for bass in the waters of northern Vermont. The Vermont native son is a little more tolerant of the black bass than is the resident of Maine. However, he adheres to the old tried-and-true method of fishing live bait in deep water, usually from an anchored boat. Consequently, the rocky shore lines of the ponds and rivers are virgin territory and remain so year after year—that is, until my boy Dick and I show up for our summer vacation.

A good share of my time at camp is spent with George Donovan, owner and co-boss of Echo Camps. His attractive and efficient spouse is the other—and, I sometimes think, the real boss around camp. During most of the season, George plays the part of the businesslike camp owner very well. He sees to it that the boats are kept in condition and ready for use, looks after the comfort of the guests, supervises the activities of the employees, and generally attends to the million and one details incidental to the well-run fishing camp.

With the advent of the Knight family, however, comes complete

SPENT BEETLE

JUNE BUG

MYSTERY BUG

COOPER BUCKTAIL

BRODHEAD BUCKTAIL

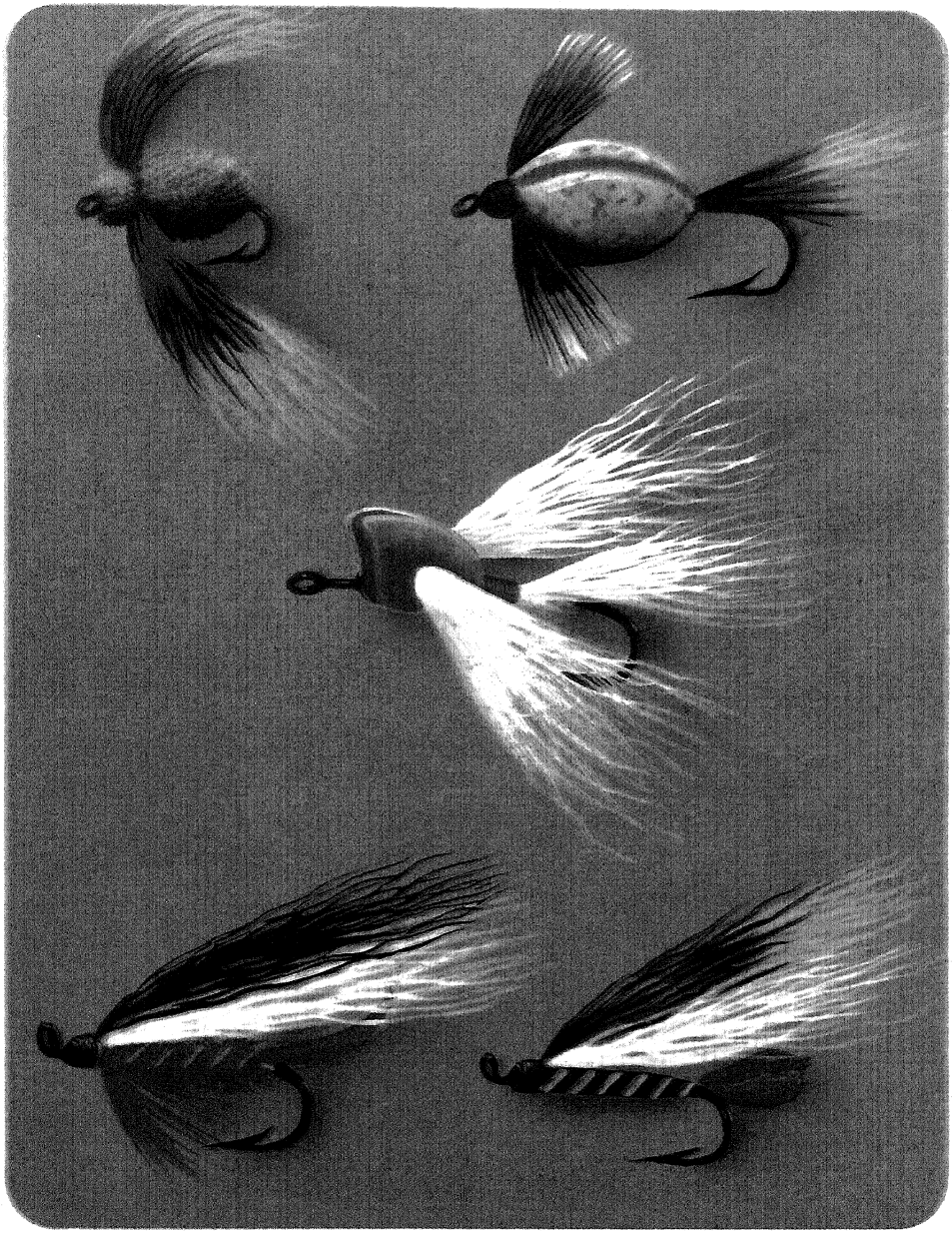


PLATE 7. BASS LURES

demoralization. With a sigh of resignation, his better half takes over and George and I take up the more important business of bass fishing. While I have fished the bass bug for some twenty-odd years, George has adopted it only recently. Being an excellent angler, it took almost no time for him to learn to handle a bass bug in great shape and, this method being new to him, he brings to its use a fresh viewpoint, one that is in no sense dulled by the erosion of habits formed through long association. Being an excellent caster, he handles the bug at unbelievable distances, the actual casting being almost automatic and requiring no conscious thought. Consequently, his mind is not burdened with mechanical problems and is free to apply itself entirely to the job in hand—making the bass strike once the bug has been cast.

There is no doubt that George's complete preoccupation while he is fishing accounts for his success. Not only does he become absorbed entirely in his fishing; he is always observant and quick to apply odd items of information that he can turn to good use. This faculty brings him a surprising number of bass each year.

To handle a bass bug requires the use of both hands—one on the rod and the other to strip in line. Therefore, to light a cigarette means to leave off fishing for the moment. Not wishing to go through the laborious process of reeling in sixty or seventy feet of line, I have adopted the dangerous expedient of putting down the rod and lighting a cigarette after the bug has been freshly cast and the line lies fully extended on the water. The first time I did this, George warned me.

"That's dangerous business, Mister. One of these days you're going to miss an extra good bass while you're doing that."

"I know," I told him. "But I like a little extra hazard in my fishing. Anyway, I'm too lazy to reel in and do it right."

As luck would have it, I did miss an old buster of a bass the very next time I tried it. The old grouch boiled out from under a stump and the first I knew of his interest in the motionless bug was when I heard the awe-inspiring splash of his strike. Before I could get my hands on the rod and line, he had ejected the bug and gone home to his stump to think about this new kind of tidbit that looked so good and tasted so bad. George said nothing. He just sat there and grinned.

When George was fishing, the same thing happened, although once more the fault was mine. When boat fishing, the only satisfactory way to arrange things is for one man to fish while the other keeps the boat in place. Here the old rule "Two's company, three's a crowd" applies quite definitely. Not only are three a crowd; the presence of the third man in the boat is, in fact, a menace to both comfort and safety. Thus, when George and I go fishing, we go as a twosome.

To handle a boat properly, the man in charge of the boat not only must keep it in place while the cast is being "fished out" but he must anticipate the next cast and have the boat in place for that also. Thus he must concentrate on the bass bug and the shore line and watch what is going on at all times. With this in mind, the logical time for conversation is when one cast has been "fished out" and the bug is being picked up and recast. Now and then, George would be talking—usually in answer to a question from me—when the bug alighted on the surface, and before beginning to play the bug, he

would finish what he had to say. This proved fatal. Two very able fish were thus lost simply because George was looking back at me at the time they struck.

While these misfortunes were lamented at the time, they carried their lesson with them. George spoke about it first.

"Doesn't it seem funny that we raise and lose three big bass on bugs that were lying quietly on the surface?" he said. "We have been casting at the rate of about twice a minute. That means one hundred and twenty casts an hour. In three hours that adds up to three hundred and sixty casts. All but five of those casts were fished out carefully with the bug played in the most enticing manner. The result of all this casting is a total of about twenty strikes, or one strike to eighteen casts. Then, out of the five casts when the bug was allowed to lie quietly on the surface, we raised three fish. It looks to me as though we were fishing much too fast."

While I had never looked at it in exactly that way before, I had always felt that the more time I took with each cast, the better results I seemed to get. So instead of fishing two casts to the minute, we slowed down our pace so that a minute or two would be taken to the fishing out of each cast. Not only did we cut down on effort; we stepped up production considerably.

I used to enjoy watching George lose himself in his fishing. To make his bug act like a small creature that had fallen into the water, George would endow it with the powers of thought and speech; that is, he would carry on a monologue that was supposed to represent what the bass bug was thinking and saying as it rested on the water.

"There," he'd say, as the bug landed in a likely pocket along shore. "This looks like a nice safe place. . . . Oh, my Gosh! Look at that big bass over there. I'll sit quiet and maybe he won't see me. . . . I guess I'd better get out of here . . . Gee whiz! Here he comes. Hurry, hurry, hurry. He's going to get me if I don't get out of here. . . . No, there he goes back again. Well, let's try another place."

This sort of thing would go on indefinitely, and I've seen him coax bass out of water that I would have passed up as not worth the effort. A man that wants to learn about bass-bug fishing can learn a lot from George. Long casts—don't crowd your fish. Fish slowly, just as slowly as you can, and then still more slowly. Make your bug act as though it were alive and in trouble. Those three rules will produce bass for you.

Frequently it is not advisable to try to take bass on the surface. In deep water, unless the fish are feeding and on the move, a surface lure will not prove productive. Then you will have better luck if you use a sinking lure. For this style of fishing, it is preferable to use a heavy line that will sink readily. This, with a stout leader of six or eight feet, will handle sinking lures more effectively than the floating line.

As in the case of bass bugs, there is an infinite variety of underwater lures for use with the fly rod. While the ones that are made of metal are undoubtedly effective, they are unpleasant to cast when compared with bass flies, streamers, and bucktails. Although many

anglers still adhere to the conventional patterns of bass flies, I have deserted these in favor of the streamers and bucktails. Plate #3 shows an assortment of underwater lures that have been good fish-getters in past years. I am not at all sure that adherence to exact pattern is particularly important in choosing a streamer or a bucktail for bass. So long as the lure is cast and played properly, one seems to do the job almost as well as another. The lures shown in Plate #3, however, have stood the test of years and hence are offered as useful suggestions in case you are not content with patterns of your own. If you prefer to use the streamers and bucktails with a small spinner, as many anglers do, then they should be tied on a straight-ringed hook. If you prefer the lure without the spinner, the hook with the turned-down eye is better.

No matter whether you are using a bass bug, streamer, or bucktail, your chances of hooking your bass solidly are better if you use a long-shanked hook. When a bass strikes, he does not always engulf your lure. More often he will seize the lure between his strong jaws in order to kill or disable it before swallowing it. It is very difficult, if not impossible, to set the barb of a bass hook in the tough jaw of a bass, and if you are using a hook with a short shank, you are fairly sure to lose the fish if the hook joint engages in the tough outer section of either the upper or lower jaw. With the long-shanked hook, the point is more apt to engage *behind* this tough section and your fish will be well hooked. With the bass bug, this is particularly true, so you'd better keep it in mind when you are buying or tying your bass bugs.

Many anglers, and, for that matter, manufacturers as well, make the mistake of using a turned-down or a turned-up eye on the hook used in a bass bug. For the "feather minnow" type that is designed to be fished awash or slightly under the surface, the turned-up or turned-down eye is all right. But for the top-water bug, better results will be had if a straight-ringed eye is used. The reason for this is perfectly clear and logical.

No matter how much line dressing or dry-fly oil you put on a bass-bug leader, as soon as you give the bug one tug the leader pulls under the surface and sinks. With the turned-up or turned-down eye, the leader extends straight out in a line that is parallel to the longitudinal axis of the bug. Thus, when the bug is being "played," the leader, which sinks immediately, tends to pull the nose of the bug down and under the surface.

If the bug is tied on a straight-ringed hook, the leader is fastened to the bug by passing the gut through the straight eye of the hook from the under side. Thus, when the bug is "played," the pull of the leader tips the nose of the bug *up*, so that it tends to skip over the surface instead of being pulled under. In this way it plays more satisfactorily and continues to ride high on the surface. More and more, the commercial bass bugs are being equipped with straight-ringed eyes.

When fishing the underwater lures for bass, I prefer the same method as that used for trout. Cast a long line across stream and allow it to sink well under before starting the retrieve. When you think the fly is several feet under the surface, keep the rod tip down and retrieve the line through the guides. Short jerks, timed at the rate of

about one a second, bring the lure toward you in an erratic manner that the fish seem to like best, and this method is more effective than retrieving by raising the rod tip and giving the lure motion in that way.

There is still another method of fishing for bass with the fly rod that will often pay dividends when other methods are of little use. When there is an established hatch of insects floating on the surface, the bass will cruise about and feed on these floating duns. When they are thus engaged, they are selective in the extreme and attempts to interest them in the more conventional bass lures usually are fruitless. The only way I have found to capture these cruising bass is to borrow from trout-fishing experience and apply trout methods to bass fishing.

When a river bass decides to feed on a hatch of drifting duns, he doesn't go about it the way a trout does. A trout will take his position in some advantageous part of the stream, and there he is content to stay and feed upon what the current may bring him. Not so a bass. Being accustomed to cruising about and finding his food when he is hungry, he is not satisfied with the number of insects the comparatively slow current of a bass river will bring to him at any one place. Instead, he will range all over the pool and take as many insects as he can find. Since his feeding method differs from the usual procedure during a drifting hatch, your angling method must of necessity be altered to meet these changed conditions.

The favorite cruising grounds of the average river bass are the long, shallow flats that form the lower ends of most of the pools.

Being located just above the riffles, the bass have found that this shallow water holds an abundance of food that is easily accessible, and they naturally gravitate to these feeding grounds when in search of food. You will find plenty of bass cruising over these shallow flats when a hatch of duns is drifting. They swim so close to the surface that their progress is marked by a V-shaped wake, and they take the duns quietly with a "tip-up" rise that leaves only a dimple on the placid surface.

The usual bass-bug outfit had best be left in the car when you're doing this kind of fishing. Instead, bring with you a dry-fly rod capable of casting a fly sixty or seventy feet. Have your line well greased so that it will float. In view of the fact that you will be using small hooks—size 12, as a rule—a tapered leader ten or twelve feet long and tapered to 3x will give you the best results. This leader is strong enough to set the small hook, and, strangely enough, a bass, when he is cruising and feeding on duns, is just as "gut-shy" as a trout.

There is no way to enter one of these feeding grounds without disturbing the fish. The slightest movement of your feet or knees will send out telltale waves. The best way is to wade, as quietly as you can, to a point from which you can cover the widest section of the feeding range. Plant your feet comfortably on the bottom, so that you won't have to move them after you take your position. Once there, the best way to occupy your time while the pool quiets down is to watch what goes on about you. It is best to use a fairly large fly that will match, as closely as possible, the hatch that is drifting. Arti-

ficial May flies, Bivisibles, Spiders, Variants, or Fan Wings are all useful. The color selected will depend upon the hatch. Having decided upon your fly and attached it to the leader, oil it well to ensure *high* floating, but do not begin casting until you have located a feeding fish. You can easily mark the direction of his progress as he nearly always leaves a wake when he moves from one fly to the next. The game is to drop your dry fly directly in his path and about five or six feet ahead of him. As a rule he will take a well-placed fly quietly, just as though it belonged to him, and you can pull the barb home with a steady lift of the rod before he realizes what has happened.

When playing a fish under these conditions, don't make the mistake of wading about the flat after him. If you do, the disturbance will ruin the fishing for half an hour or so. The best way is to apply firm pressure and let him wear himself out. Eventually you will have no difficulty in leading him over your net without moving from the spot where you stood when you hooked him. It is just as well to keep in mind that you are using light tackle when you hook and play a river bass. Compared to the fish you usually take on your dry-fly outfit, the bass is a pretty rugged citizen who will smash things if you let him. He asks nothing better than the chance to apply his full power to your tackle, and if you attempt to hold him without giving line, he is sure to pull the light leader apart and go away with your fly. Give him line when he wants it and he will wear himself out. After an evening or two with the dry fly on good feeding grounds, I think that you will agree with me that the bass, as a game fish, is in a class by himself.

Chapter 13. THE CASTING ROD

THE day was chilly for Florida. Travel folders, with their alluring pictures of sunny shores and waving palm trees, had led me to look forward to a winter of shiverless comfort. Latitude and the chamber of commerce to the contrary notwithstanding, I was grateful for the warm insulation of my officer's greatcoat as the chill wind whistled in off the Gulf and piled the waves, one after the other, against the sea wall of the Naval Flying Station. As I passed the erection hangar, I noticed a group of sailors gathered at the junction of the sub-chaser dock and the main runway. Curious, I joined the gathering.

The United States Navy, always in the process of building something or tearing something down in order that something else more elaborate could be built in its place, augmented its enlisted force of mechanics and carpenters with civilian craftsmen from Pensacola. It was one of these Florida-born carpenters who was attracting the attention of the group I had joined. Being both an angler and an opportunist, he had brought his casting rod to work with him, and, his lunch hour being in progress, he was casting a bass plug into the troubled waters between the sub-chaser pier and the sea wall. Like most of the Pensacola fishermen, he was a "side-wheel" caster. Missing the sailors' legs by inches, he shot the spotted plug away from the pier and then, lowering the rod tip over the edge of the dock, began the retrieve.

His method of fishing was new to me. Instead of retrieving the plug by steady reeling, he snapped the rod tip down smartly, causing the plug to dart through the water. Picking up the slack line with two or three turns of the reel handle, he once more snapped the rod tip down, and again the plug darted through the dark water. As the plug lay motionless on the surface, there was a flash of silver, a flurry of spray, and the angler struck. After a short but lively battle, a two-pound sea trout was swung up to the planking of the dock and deposited beside three others already there. The man took a large silver watch from his pocket, opened the case for a moment, and snapped it shut again.

"Guess that's enough for today, boys," he said. "Time to get to work." Whereupon he gathered up his catch and disappeared into the dark interior of the paint shop.

The next day, being my day off, found me leaning on the counter of the leading Pensacola tackle shop. From that day on, a casting rod, a level-winder reel, and a suitable supply of bass plugs have been part of my standard equipment.

Have you ever noticed that there seems to be a common bond of understanding among anglers? Ordinarily you would hesitate to approach a complete stranger in a railway station and engage him in conversation. By the same token, you would resent having a stranger take such liberties with you. Yet if one of you happens to be carrying a fishing rod, the unwritten laws of angling freemasonry provide that you may not only speak or be spoken to but that such advances shall be met in the spirit in which they are offered.

Our next-door neighbor, known to us only vaguely as Dr. S— and with whom we had only a "Howdy" acquaintance, was standing on his front porch ("gallery," he called it) the day I brought my new casting outfit home. Instead of the usual "Howdy" as I started up our walk, he smiled and said, "Hey! Is that a new one? Let's take a look at it."

Together we sat down on our front steps and assembled the new outfit. The doctor nodded his approval as he tested the bend of the rod, resting the tip against the soft turf of the lawn. Critically, he spun the reel and held it in various positions to see if the bearings and gears were true. Then we opened up the package of plugs.

"Who sold you these?" he asked, after a quick inspection.

I told him.

"Hm," he said. "Al knows better than that. This is some stuff he's been trying to sell for years. We'll take 'em back tomorrow."

And there you have it in its purest form. We had lived next to each other for over four months and he had not yet learned my name. But when I showed up with a fishing rod, the rules of the angling fraternity demanded that the amenities be observed. Not only did we become better acquainted; he took it upon himself, somewhat in the nature of part of his obligation in the lodge of angling, to see to it that a brother angler should not be sold inferior tackle. The following Sunday we went fishing together.

Casting a plug for sea trout is not, strictly speaking, fresh-water angling. For that matter, it isn't angling, in the narrower meaning of the word. Rather, it is more of a process of heave and trust to luck.

Neither salt-water nor fresh-water fishing, it is a hybrid offspring of the two. The Southern sea trout inhabits both the salt-water bays and bayous and the brackish water of the lower rivers. Casting for him is an accuracy job only when you are fishing around the pilings of a dock. Usually the method is to chuck the plug as far as possible out into deep water in one of the bays or inlets and then retrieve by the jerk-turn method described. Casting is usually done "side-wheeler" style—for distance—and a razor blade is standard equipment in every tackle box. It comes in handy for removing the barbs of a gang-hook from your own anatomy or that of a fellow-angler. Only once did I make the mistake of going three-in-a-boat after sea trout. One of my companions, casting with more enthusiasm than good judgment, caught me—mid-swing—flush on the side of the head with a cedar bass plug. My heavy felt hat kept out the hooks, but the plug was moving with such speed that it *broke in two pieces* with the force of the impact. I often shudder to think what would have happened had those three sets of hooks been swung a few inches lower. Then and there, "side-wheeler" casting and three-in-a-boat trips were crossed off my list of activities.

The brackish waters of the Florida river mouths hold not only sea trout; they are plentifully supplied with many varieties of fish. Huge gar now and then will roll up and grab a plug, and once in a while one of the big tarpon will take a fancy to your lure. That is exceedingly bad news. I have never seen a tarpon in or around Pensacola Bay that weighed less than seventy-five pounds, and that much fish on a fresh-water casting outfit can mean only one thing—let him

have the plug and save as much of your line as you can. During May and June, we never fished in the bays and lower rivers without taking along at least one spare line and half a dozen extra plugs.

But the prime fishing of the river mouths was for the "green trout"—the Floridian name for the large-mouth bass. Here, as everywhere, we fished for him along the shore lines. Sea trout, "red fish" (red drum or channel bass), sargent, and the other shore fish are all right for a while, but the "green trout" is by far my favorite. Brackish water seems to agree with him. I do not recall ever finding any big-mouth bass in fresh water that were as wise or that fought as hard as the brackish-water bass of the West Coast river mouths.

There are two distinct types of baits that head the list with the Florida bass fishermen. If the bass are not rising to the surface readily, the usual underwater lure is one of the pork-rind baits. More popular, however, are the floating lures, such as the Injured Minnow, Bassoreno, or one of the newer "popping" plugs. Incidentally, "pop fishing" was popular in Florida waters as early as 1920.

The Florida casting rod is usually a short one. I suppose that the vogue of rods four, four and a half, and five feet long originated with the Floridian's preference for homemade casting rods. Because of the "jerk-turn" retrieve, a method used in fresh and salt water alike, the Florida fisherman has found the usual tapers of factory-made casting rods too pliable and too long for his purpose. For comfortable fishing, he wants a short, stiff rod, so he makes it himself. Many of them use homemade plugs also. But when it comes to lines and reels, even the poorest scrub-country cracker saves his pennies and buys a

twenty-five-dollar casting reel—a level winder—and one of the best casting lines.

In central Florida you will find a higher percentage of good casters than in any other section of the country that I have fished. Here you see few, if any, "side-wheelers." These central Florida men learn to cast when they are boys, and the skill they acquire is uncanny. It is not uncommon to see groups of boys on the lawns of Orlando engaged in extemporaneous casting tournaments instead of the usual youthful games.

In 1927, the National Association of Scientific Angling Clubs held a winter tournament at Orlando. One of the local youngsters, who was entered in the junior casting events, fell off his bicycle on the way to the tournament and broke his right forearm. Instead of going home, he went to his doctor's office and had the fracture set. Then he went to the tournament and, in a field of fifty-eight entries, proceeded to take second place in the ⅝-ounce accuracy event, casting with his *left hand*. That will give you some idea of the familiar terms these boys maintain with their casting tackle.

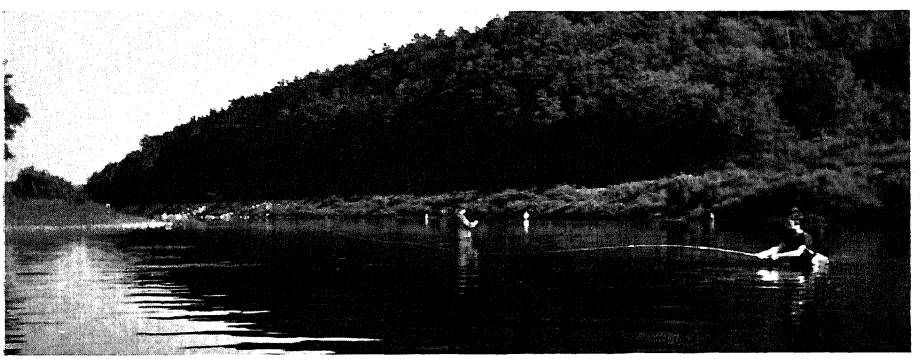
Plug casting, while not as difficult as fly casting, is becoming more and more a finished art. The fundamentals are simple. Note that the rod is held so that the reel handles are on top instead of on the side. This position of the hand enables you to use full play of the wrist. Unlike the casting motion of the fly rod, which is divided into three parts—pick-up, pause while the back cast completes itself, and forward cast—the casting motion with the plug rod is one continuous movement. With the rod held at about "ten o'clock," the angler aims his

cast. Then the rod tip is brought back to about "two o'clock" with a sharply accelerated pick-up or back cast. Immediately and without any pause, the rod is snapped sharply forward again to the "ten o'clock" position and the reel drum is released just prior to the completion of the forward motion. The thumb can be held against the line on the reel drum or against the metal side plate of the drum itself. As the plug goes away from the rod, the speed of the drum is controlled by slight pressure of the thumb, either on the metal side plate or on the line. In this way, the reel is prevented from "overrunning" and causing a backlash.

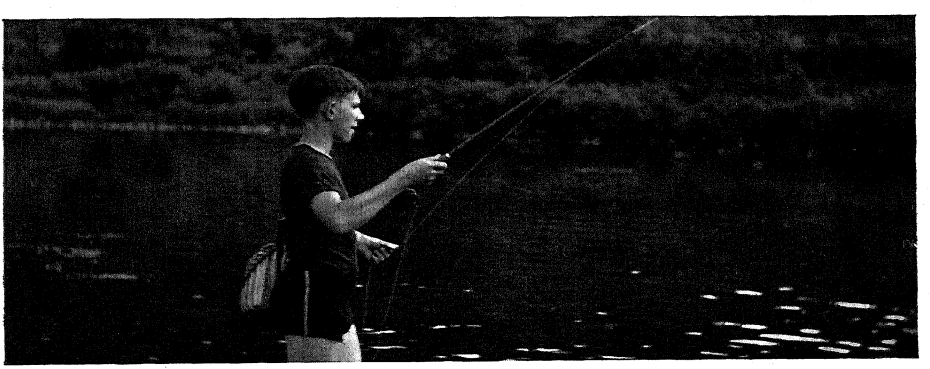
If you are planning to take up plug casting, don't make the mistake of learning to cast while you are fishing. Do your practicing at home, on the lawn or in the driveway. In that way you will save yourself—and your companions—many headaches and a lot of lost time. It won't take you long to learn to handle a plug rod so that you are reasonably sure to hit a desired spot at distances of fifty, sixty and seventy feet, and that is enough line to use in ordinary fishing.

For all-round bait casting, I prefer a bamboo rod five or five and a half feet long. It should be flexible enough to add some snap to your cast and rugged enough to set the hooks of a bass plug. The six-foot tubular steel casting rods are exquisite tools, particularly for casting the lighter lures, but my early Florida training keeps my preference leaning toward the shorter, faster bamboo rod. No two casting outfits handle exactly alike, and the angler must accustom himself to his own outfit. Your choice of rod and reel can therefore be based upon the uses to which you intend to put them. In any event, you will have to

Tying on the Bass Bug

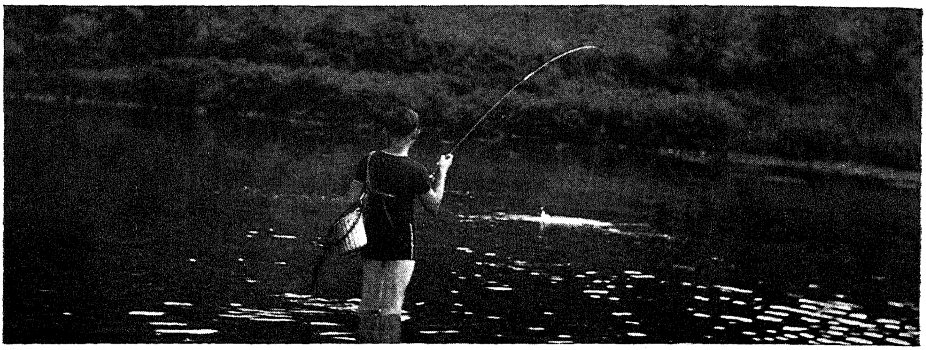


Making the Cast

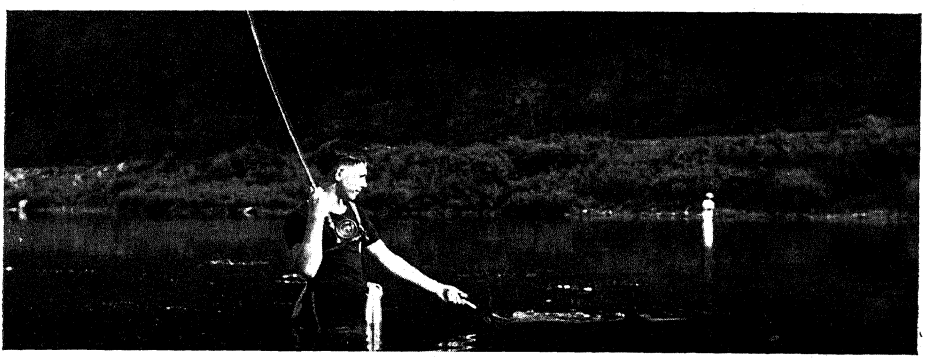


Playing the Bug

SUCCESS STORY



Strike!



Netting the Fish

End of the Battle

SUCCESS STORY (*cont'd*)

practice until you familiarize yourself with their individual qualities.

Be sure to get a rod grip that has a "swelled butt." The cigar-shaped grip is fine for a fly rod, but it does not give your hand enough grip on a casting rod. I have seen at least half a dozen casting outfits thrown over the side of the boat. The "swelled butt" on the grip gives the fingers something to grab in case the sudden tug of a backlash tries to pull the rod from your hand.

The backlash problem is not as serious as it was twenty years ago. Today the plug caster can buy reels equipped with anti-backlash devices that make plug casting just about foolproof. Of course, a well-trained thumb is the best anti-backlash device of them all. The others reduce distance on your casts by slowing down automatically the revolutions of the reel drum.

In case you have a pet reel that is a little too fast for your casting, you can apply your own anti-backlash device by filling the gears with heavy automobile grease. Don't ever make the mistake of using the "click" on a casting reel as an anti-backlash arrangement. To be sure, it will stop backlashes for a while, but it will soon wear out and have to be renewed. The "click" should be used only to keep the reel drum from turning freely when not in use.

When you are buying a casting reel, don't be satisfied merely by the fact that the reel spins freely when held right side up. Of course it does, or it wouldn't be on sale. Make sure that it will spin just as freely upside down or on either side, and listen to the gears as they turn while the reel is in various positions. See that the drum is light enough for its inertia to give it a low "starting torque"—the

force necessary to put the drum in motion. Test the bearings for end play and loose bushings, and be sure that the drum fits in the frame, so that there is no space for the line to be caught behind the end plates of the drum.

Old-school casters look with profound disdain upon the level-winder reels that are so popular today. They learned to cast before this labor-saver was invented, and their lines were spaced on the reel drums with the aid of educated thumbs as the retrieves were made. Well, that's all right if you plan to do only simple, continuous reeling while you are fishing. Consider, however, what happens when, for instance, you are using the "jerk-turn" retrieve for sea trout. Here the line is respooled without being under tension. Without the level-winding attachment, each snap of the rod tip is apt to throw a turn of loose line out of place on the drum and the result will be a back-lash on the next cast. When you are playing a surface plug or a "popping" lure, the rod is held high and again the slack line is reeled in without being under tension. No matter how well trained the thumb may be, you can't thumb a line that falls away from your thumb because of lack of tension. I once had the dubious privilege of watching a national champion spend a good share of his day picking out backlashes the first time he tried to fish a surface plug. The next day he bought a level-winder.

While the soft braided casting lines will cast easier and farther, they pick up more water and produce a hopeless snarl if they happen to backlash—as they sometimes do. Better get a waterproof braided silk line and play safe. Keep the reel drum filled to capacity. It makes

casting easier and retrieving faster. The lighter the line, the easier it will cast. I like a line that has a breaking test of about nine pounds for ordinary plug casting.

Some men fasten their plugs to the casting line by tying the line directly to the plug. Others use a wire trace equipped with a snap swivel. A few prefer to use a leader—usually of synthetic gut. For my part, I tie a loop about six inches long in the end of my line. By slipping this loop through the eye of the plug and then passing the plug through the loop, the plug is securely held and easily removed. The double line takes the extra wear at the rod tip when I'm casting, and there is no additional gear to carry, such as leaders, snaps, and wire traces.

I don't know a pleasanter way to spend a summer day than to fish an interesting shore line of a good bass lake. Every stump, weed bed, brush pile, or "pocket" in the rushes holds its own individual fascination. Bass are such explosive creatures. Their approach is usually unheralded and they strike at the least expected times. The spots where you expect a strike all too often produce nothing, while a casual cast into uninviting water often brings action aplenty.

During the summer of 1939, my son and I were fishing a small pond in Northern Vermont. We had just finished casting over an excellent piece of shore-line water and the boy had committed the unpardonable sin of reeling in line on top of a small backlash. As we headed across the lake toward another favorite cove, he decided to improve his time by respooling his line while I rowed the boat. Accordingly, he cast his plug out over deep water and, when the

backlash turned up, the plug stopped in mid-air and dropped to the surface with a most undignified "plop." As he began to unravel the backlash, a bass that must have weighed all of three pounds boiled up out of the depths and smashed that plug with royal enthusiasm. Occupied as he was, the boy had no chance to set the hooks and the fish went his way while we went ours. Moral: Remove your backlashes when they happen, so that you will be ready for emergencies.

Where the shore line is well defined, casting is comparatively simple. Then the plug can be spotted into likely corners and pockets, and played without fear of complication. But casting a plug over shallows that are encumbered with rushes, brush, water lilies, and weed growth requires patience and not a little skill. Often the temptation to pass up a piece of difficult water will get the better of your good judgment. Every time you do that, just remember that other anglers have no doubt done the same, with the result that the bass which live in those inaccessible waters have not been disturbed by other fishermen and consequently are probably more willing to do battle than the fish in the open water. With that in mind, I prefer to fish the difficult water, simply because it is nearly always more productive.

To me, the top-water lures offer the most pleasure to be had with the casting rod. Like the bass bug, a top-water plug should be fished very slowly. Long pauses and variety of movement are important if you are to get the best results. In theory, the plug represents some luckless little animal or fish that has dropped to the surface of the water. Your job is to make it appear helpless and under great diffi-

culties. If the plug moves too fast or with any show of confidence, it presents a less attractive appearance to the bass. He has no compunction about picking on a cripple, and the ferocity with which he hits a plug that is barely moving leaves no doubt as to his intentions or his sense of sportsmanship. Survival of the fittest is his creed and his world has no room for the weakling or the disabled. By and large, he makes an entirely satisfactory adversary.

The casting rod is not adaptable only to the heavier types of fishing. Each year new uses are found for the casting outfit. In the trout streams, the little spinning devon minnows have been found to be quite attractive to the larger fish. Longer, more flexible rods are used, with reels equipped with extra-light spools which permit the casting of lures weighing a quarter of an ounce or less.

In casting the lighter lures for trout, use a small swivel set about six inches above the minnow to minimize kinking the line with the spinning action of the minnow. Even with the swivel, a certain amount of twisting is bound to occur, as the line used for this fishing is exceedingly fine, testing only three or four pounds. Therefore always buy your devons in pairs—one with a left spin and one with a right spin. When the line begins to kink, just change to the lure with the opposite spin and matters will correct themselves.

Some devon anglers prefer the "stationary drum" type of reel for use with the spinning devons. The spool of this reel is set at right angles to the rod, allowing the line to come off over the end of the spool rather than being unreeled from the side, as in the case of the multipliers. At the completion of the cast, a turn of the handle causes

the automatic "pick-up" to catch the line and coil it back on the drum during the retrieve. Level spooling is achieved as the drum itself moves forward and back while the line is reeled in. Should the fish decide to run, line can be pulled from the drum, which revolves under adjustable tension, so that once the fish is hooked, all you have to do is turn the crank with the left hand and the reel does the rest. They are all right if you like them. I still stick to my quadruple multiplier.

Even though you never take your casting outfit fishing with you, there is still a lot of fun to be had with it. As a lawn game, casting a tournament plug to a set of targets is a grand way to use the hour or so between dinner and dark of a summer evening.

To be sure, the fly-rod enthusiasts raise an eyebrow at the casting rod. They behave toward the plug caster much in the manner of the dry-fly purist toward the wet-fly fisherman. But the purist, thank goodness, is a vanishing race. Anglers are learning that strict adherence to one style of angling has its narrowing effect on the fun to be had from the sport as a whole. And they stand to miss a lot of real pleasure if they pass up the casting rod.

Chapter 14. FACTORS GOVERNING THE HABITS OF FRESH WATER FISH

Wind in the east—fish bite least.
Wind in the west—fish bite best.
When the wind is in the north,
The prudent angler goes not forth.
But when the wind is in the south,
It blows the hook in the fish's mouth.

PERHAPS the most fascinating thing about angling is its uncertainty. We never can be sure, when we set out with high hope and a full tackle kit, just to what extent our efforts will be rewarded. Sometimes the fates favor us and the fish respond with high gusto. More often, however, we find our quarry more disposed to regard our choicest offerings with a jaundiced eye.

The natural reaction to this variation in the day-to-day response of the fish to the angler's wiles is to try, if possible, to tear aside this veil of mystery and to solve, once and for all time, the age-old puzzle of why the fish do or do not strike our lures or take our bait. True, if this could be done, much of the charm of angling would go with the solution of the problem. It seems safe to say, however, that the likelihood of achievement of this goal is extremely remote. So many known factors enter into the problem that, even if we were sure of our predictions (which we are not), errors in calculations and the un-

expected introduction of new factors into an established set of conditions would often completely upset all our prophecies. In addition, when we consider that we *know* comparatively little of fish and their habits as compared to what has yet to be learned, attempts at accurate, bulletproof forecasting of the behavior of fishes are no serious threat to our enjoyment of angling.

Ever since the day when the first angler hooked his prehistoric fish on a bone hook and pulled it to shore with a line of rawhide thong or willow bark, anglers have conjectured as to the quality of their success before starting out for a day's fishing. The word "conjecture" is used advisedly. Some of the beliefs of our forefathers concerning the behavior of fish are fantastic in the extreme. For some thirty years I have made it a point to question the local experts when I had the good fortune to encounter them on the stream or in the village when I was on a fishing trip. Their rules for angling success were carefully recorded in a notebook. There is no space here for the listing of these rules for success. Suffice it to say that the amazing mass of misinformation which I have accumulated is nothing short of appalling.

Now and again, however, a grain of wheat may be found among this chaff. One of the oldest of the angling formulae is the doggerel quoted at the beginning of this chapter. The belief is quite general that wind, of itself, has its definite bearing on the quality of our fishing. Next in line comes the moon and its positions and phases. The color of a sunset, the actions of a leaf on a tree, the song of a bird—all these things are counted as being direct in their bearing

upon fish behavior. Strangely enough, these things and many more may well be taken into account.

Perhaps the wiser course would be to examine the things which we know are true. Then, with these as a foundation, conjecture is not so apt to get out of control and run riot. Consider, for instance, that most vital of all factors—temperature.

There are two types of temperature which have their bearing upon fish activity—air temperature and water temperature. Air temperatures are important in that their effects are, for the most part, indirect. In general, the ideal balance of air temperature and water temperature is when the former is from ten to fifteen degrees Fahrenheit warmer than the latter. You will seldom find good fishing when the air temperature is cooler than that of the water. Many times have I seen the trout stop feeding as soon as a mist appears over the surface of the water. A mist, of course, means that the air temperature is cooler than the surface of the water, causing condensation of water vapor. This temperature variation can be felt by the fish only indirectly through the medium of the chilling of the water directly at the surface. Why this slight change of temperature should have such a pronounced effect upon their feeding activity has not yet been explained. Here, then, is an excellent opportunity for conjecture to begin.

Another instance of the effect of air temperature upon the fish is the indirect effect of warm air and summer sun upon the surface of a long, comparatively quiet pool or "flat" in a trout stream. Let us assume that the water which flows through the riffle at the head of

such a flat enters the pool with a temperature of sixty-eight degrees. Should the "flat" be one hundred yards long or better, with a slow rate of flow, it is possible for the water which flows out of it into the next pool to have its temperature stepped up as much as five degrees. What is the result and how is the fishing affected? Above this flat you may find excellent dry-fly fishing. Trout feed actively at sixty-eight degrees. Below, however, at seventy-three degrees, the temperature is too close to top tolerance for comfort. The result will probably be a concentration of the fish in the deeper, cooler water and around the spring holes. Self-preservation comes first, and temperatures above seventy spell danger to the trout.

Water temperatures are of direct importance in the quality of your fishing. By the use of a stream thermometer, much can be learned of the probable location of trout in a stream before you so much as make the first cast of the day. In the early season, when water temperatures are low, the trout do not tend to be particularly active. Temperatures in the high thirties and low forties usually mean that the trout will be somewhat lethargic. Consequently, you are more apt to find them in the backwaters and on the bottoms of the pools and out of the fast water. This is not always true. I have had some excellent dry-fly fishing during a snowstorm while the water temperature was well down in the forties. But this was during the development of a hatch of early blue duns and the fish were feeding regardless of adverse conditions.

Generally speaking, fifty-five degrees is a good mark to remember when deciding upon the use of the wet fly or the dry fly. Unless

there is an unusual condition, such as a hatch of flies, good dry-fly fishing will seldom be had, either with salmon or trout, if the water temperature is below fifty-five degrees. Also, and this is a good thing to remember, if the water temperature is below fifty-five degrees, better fishing will usually be had by matching a hatch with a wet fly and drifting it well below the surface, even though the fish are feeding actively at the surface on a hatch of drifting duns. The reason for this is obvious. After each rise, the trout, instead of remaining near the surface, returns to the stream bottom when the temperature of the water is below fifty-five degrees. Thus, if you make your offering of an artificial fly as accessible as possible, your chance of having it taken is far better than if you drift it in direct competition with the floating duns.

When the temperature of the stream reaches the middle sixties, then it is that you will usually have your best dry-fly fishing. The trout seem to be most active at that time and feed more readily than they do at higher or lower temperatures. In passing, let me remind you that none of these rules is absolute. Regard them, rather, as generalities. Then, if your fishing does not come off as expected, you at least have the advantage of knowing what *should* be happening. Often this is of great aid in determining the remedy with which to meet an unusual condition.

Temperatures in lakes are usually more involved than those in streams. The current in a stream, particularly if it is a fast-flowing stream, makes for uniformity in temperature, so that there are few places where there is any wide variation. In the deeper pools and near

the spring holes or about the mouths of the feeder streams, you will find temperature fluctuations of a few degrees, but, generally speaking, the temperature of the flowing water at any spot may, for all practical purposes, be considered to be the temperature of the stream at that time.

In lakes, however, where the water depends largely upon the wind for its mobility, the temperature set-up is radically different. During the winter, surface temperatures are constantly colder than sub-surface temperatures, usually manifesting themselves in a covering layer of ice. With the approach of spring, the ice is melted by the sun and broken up by the wind, and, for a short time, the temperature of the water from bottom to surface is approximately uniform. Then it is that we have excellent shore-line fly fishing for landlocked salmon, "square tail" and lake trout in our Northern lakes.

With the advent of a few warm, sunny days, water temperatures of the lake rearrange themselves into their typical summer relationship with the establishment of the *thermocline*. Plate #8 shows the cross section of a lake in Pennsylvania during the summer months. The perpendicular scale indicates depths in feet and the horizontal scale shows an arbitrary measurement of temperature in degrees Fahrenheit. The temperature curve for that day is shown by the heavy black line AB.

By way of explanation, when the warm spring sun begins to raise the temperature of the lake water, temperatures resolve themselves into three separate and well-defined layers. At the surface is the *epilimnion*, or upper layer. This layer of warm water is usually com-

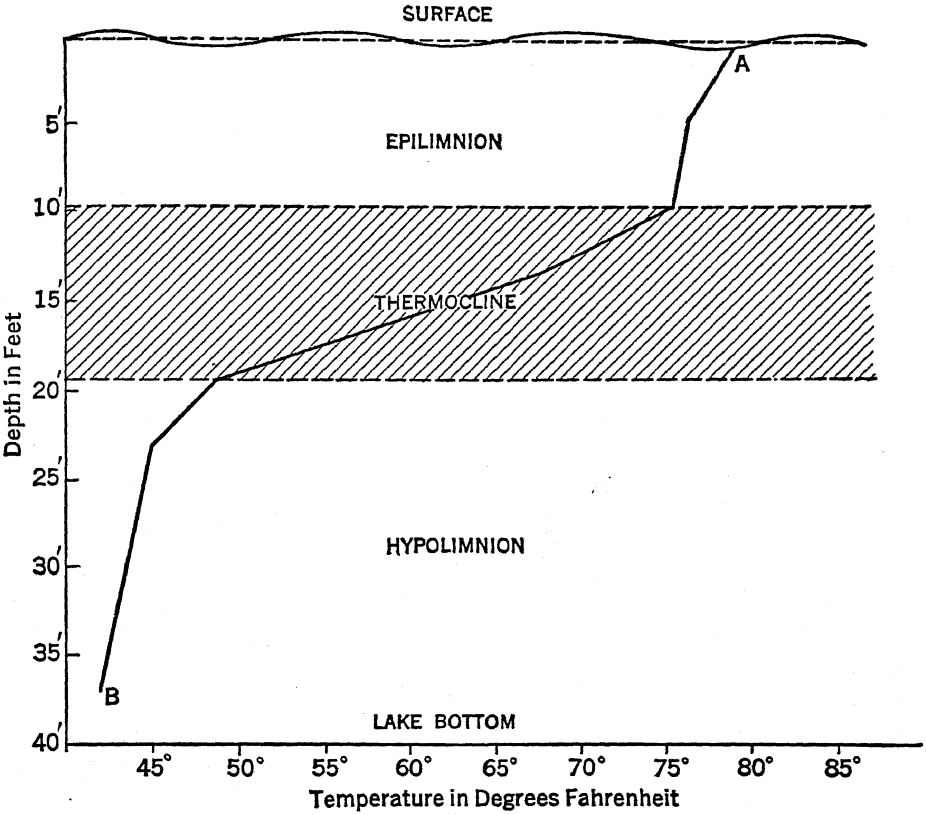


PLATE 8. LAKE CROSS SECTION SHOWING TYPICAL TEMPERATURE LAYER ARRANGEMENT DURING SUMMER MONTHS

paratively thin, ranging, as a rule, from ten to fifteen feet in depth. The bulk of the water of the lake, which comprises the *hypolimnion*, or lower layer, while quite deep is also of fairly uniform temperature, considerably colder than that of the upper layer. Between these two extremes is a layer of water, usually comparatively thin, through which there is an almost radical variation of temperature. This layer, the *thermocline*, plays an important part in the distribution of the fish during the summer months. While the depth and temperature range of the *thermocline* vary from day to day, it is usually easy to strike a general average of the location of these layers for the summer months, so that this information can be put to use in fishing the lake. By means of readings taken from a maximum-and-minimum thermometer (an inexpensive and useful gadget to have in your kit), it is not much of a job to locate approximately the average *thermocline* of any lake. Having the *thermocline* recorded generally, it is then a simple matter to take daily checking temperatures in order that you may not go too far afield.

Knowledge of the temperature ranges of your lake is quite useful. By way of illustration, suppose that you intend to go bait fishing for small-mouth bass. The habits of the small-mouth bass in deep-water lakes are quite well established. Spring spawning is done in the shallows at temperatures ranging from sixty-two to sixty-seven degrees. The small-mouth, although perfectly able to live happily and actively in temperatures in the high eighties, prefers a temperature range of approximately that suitable for spawning conditions; i.e., sixty-two to sixty-seven degrees. If he can find a combination of feed-

ing grounds plus suitable temperatures, that is where you are most likely to find him. A glance at Plate #8 shows that average temperatures of from sixty-two to sixty-seven degrees usually maintain at the level of from fifteen to eighteen feet in depth. So, if you find a rocky bar about that depth under the surface, you are pretty sure to find your small-mouth bass more plentiful than elsewhere.

The same system holds good for other game fish in the lake. You know that native trout prefer water ranging in temperature from forty-eight to sixty degrees. In the lake, that means at depths of from sixteen to thirty feet. Brown trout and rainbow trout like their water from fifty-five to sixty-eight degrees. Glance at your *thermocline* chart and you can find your trout more easily. Lake trout and salmon like colder water of about forty-five degrees. You will have to look for them at about the forty-foot mark. This bit of knowledge will save you many hours of fruitless trolling with your lure in temperatures unsuited for the fish you wish to find.

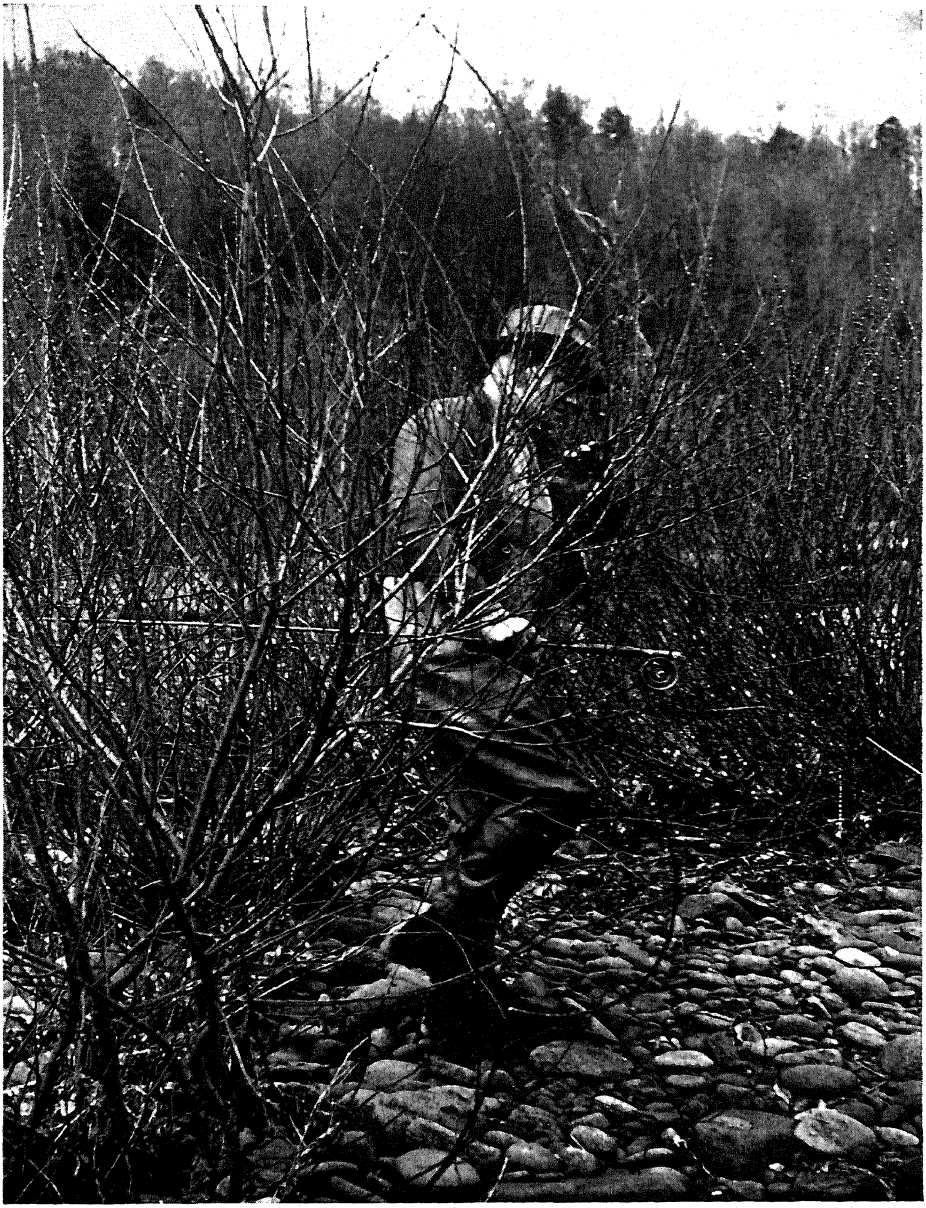
The habitués of the lake of which Plate #8 shows the *thermocline* had found, by trial and error, that they had their best luck with small-mouth bass at depths of from fifteen to eighteen feet. One summer, however, this rule did not apply. Not knowing of *thermoclines*, they concluded that the supply of bass was dwindling and that the lake needed restocking. Fortunately for them, a professional limnologist visited the lake. He found that, because of an unusually windy summer, the *thermocline* was much deeper than during former years and that the bass were down around the twenty-five-foot level. Once this discovery was made known, the bass fishing was as

good as ever. Next season you might include a stream thermometer and a maximum-and-minimum thermometer in your kit. I feel sure that the investment will pay you both in fish and fish lore.

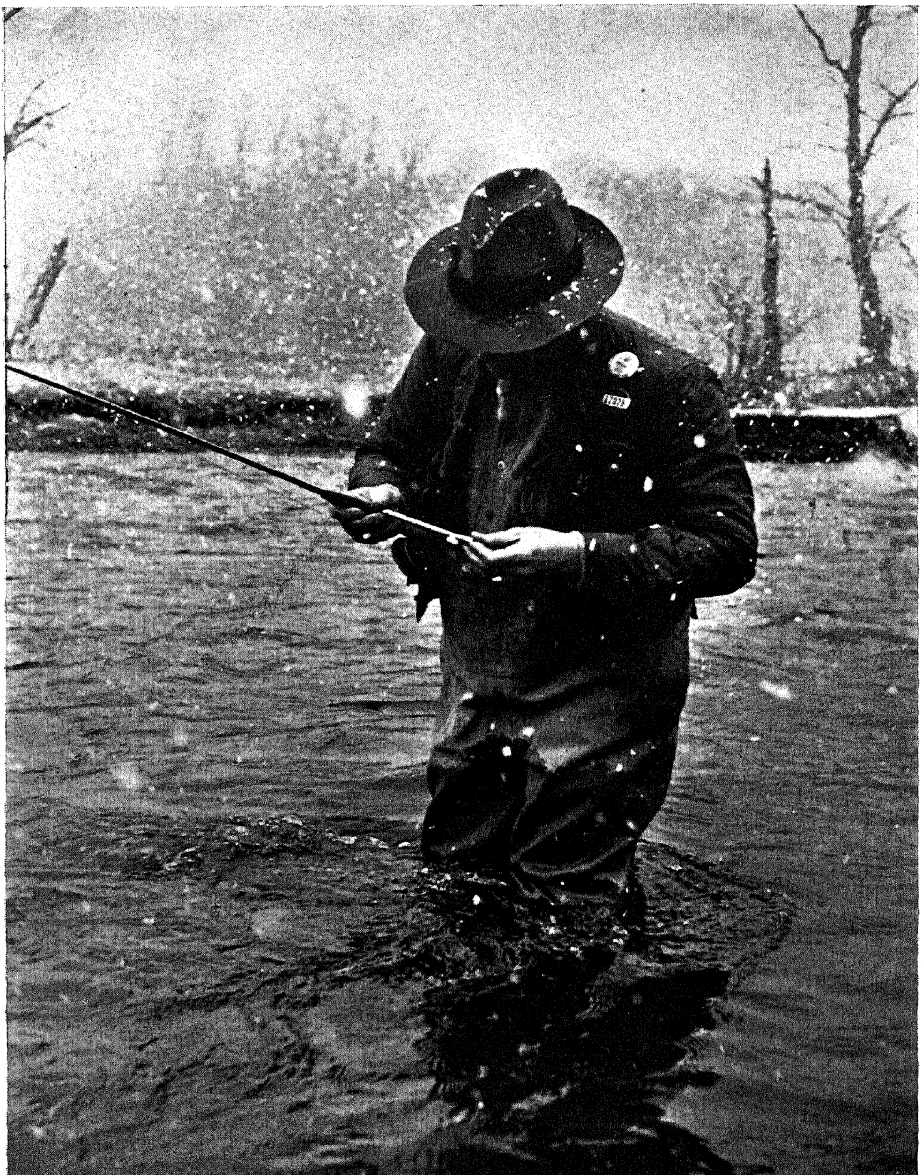
Another of the important factors which influence your fishing comes under the general heading of "water condition." This includes such items as floods, water levels, "working" or "purging" lakes, etc.

Spring floods are normal and to be expected and, if they are not too severe, do little harm. They supply the means of removing ice from the streams with less damage than if it were carried out of the stream bed with lower water levels. The adult fish, which have wintered in the deeper pools and the broader waters of the river in its lower reaches, are equipped by nature to survive these spring floods without harm. The higher water levels of spring facilitate the annual spring migration and allow the trout to pass barriers in the stream which could not be negotiated at summer levels.

Summer floods, on the other hand, raise the very devil with things. The fish, already installed in their summer residences, are driven out and into the quieter backwaters and overflowed sections. Stream bottoms are scoured with the resultant destruction of countless stream-bottom insects. Beneficial growths of water weeds and vegetation, as well as waterlogged sticks and logs, are carried away, and everything is covered with a fine coating of silt which adds to the loss of insects. As the water recedes, the fish that have taken refuge in the flooded areas must find their way back to the main stream. This cannot always be done. Many fish are trapped in temporary inland



TO AVOID BROKEN ROD TIPS, CARRY THE ROD BUTT FORWARD



COLD COMFORT ON THE BEAVERKILL—WATER TEMPERATURE 38, AIR 30

pools, and these become easy victims of predators or die from lack of fresh water as the pools evaporate.

Some years ago the streams of the Catskills experienced a severe summer flood. They overflowed their banks and in some cases completely filled the floors of their valleys. Stream bottoms were scoured, new channels were cut in some places, and untold damage was done. That summer saw many large fish taken from the tributary streams. These fish had undoubtedly taken refuge in the smaller streams to escape the pounding waters of the parent river. One man found a four-pound trout, alive and in good condition, marooned in a partially buried barrel on the bank of the Beaverkill. With his landing net, he extracted the fish from its makeshift refuge and returned it to the river none the worse for its experience. As might well be expected, the fishing in many of those flood-ravaged streams did not return to normal for the next two seasons.

"Working" or "purging" lakes have well-known effects on the quality of the fishing. This annual sowing of the seeds of the water weeds usually occurs during the hot summer months when the water is low and warm. But low levels and adverse temperatures are not the main contributing factors that place a temporary damper on the fishing when a lake "purges." The presence in the water of a greatly increased amount of vegetable matter which naturally tends to germinate in the higher temperatures steps up the carbonic acid content of the water itself to the point where the fish are physically affected. Also, the presence of this additional vegetable matter makes for poor visibility, which is of itself a deterrent to good fishing. "Purging" is

not confined to lakes. Many rivers are similarly affected. During periods of low water, the Delaware River accumulates a growth of algae that makes fishing not only unproductive but well-nigh impossible. This subaqueous plant releases its seeds and the river in its upper reaches sometimes takes on the general appearance and consistency of pea soup. Under these conditions, fishing is out of the question.

Water levels are important in determining the quality of your fishing. Game fish prefer a supply of water that is ample to give them freedom of movement and protection. A stream is never too high to furnish good fishing, providing it is clear and wadable. Low water, however, is a definite deterrent to consistently good fishing.

In the salmon rivers, water levels are important. In a given pool, should the water be too high, the fish will not stay in their usual resting stations because of the heavy current. Should the water be too low, they will move on to a pool that affords them more cover. The guides on the river have learned at what levels to expect good fishing in the various pools and runs. A difference of as little as an inch or two in water level will often determine whether or not a pool will hold fish or will be completely empty of salmon.

Low water in lakes seems to have the same general effect on the fishing as it does in streams. Consider, for instance, the effect of a change of water level upon an adult large-mouth bass. When the spring spawning is over, the adult fish will move into his summer home, usually near a large rock, stump, fallen tree, or patch of lily pads. Here he will stay so long as there is sufficient water to give him comfortable cover. Should the level of the lake be lowered, how-

ever, to the point where the water no longer is deep enough to furnish what he feels is adequate protection, he moves out. Usually he does not bother to find a new shore-line residence. He just moves into deep water and stays there until the lake returns to normal. Thus, to take him with an artificial lure, you must fish for him "fine and far off" with a sinking bait. Trout and salmon have the same tendencies during periods of low water. They concentrate in the deeper pools, layer upon layer, and patiently wait for the return of normal conditions.

The supply of natural food has its effect upon the quality of your fishing. In every stream or lake, the food supply is usually more or less static. A trout can always fill up on insect larvae from the stream bottom, and a bass can find himself a minnow, crayfish or some such tidbit if he cares to take the trouble to look for it. The introduction, however, of an unusual supply of food, such as a hatch of May flies, will nearly always put the fish "on the feed" and thus make for better fishing.

When a game fish is not actually feeding, he spends most of his time in his resting station. This resting station is chosen mainly to furnish suitable cover and protection. When a hatch of edible duns begins to drift, he will leave the resting station and take a feeding position where the maximum of food may be obtained with the minimum of effort. When in this position, unless the fish is extremely selective in his diet, your offering of an artificial will frequently be taken far more readily than it will if you attempt to lure him from his resting station.

These feeding positions vary according to the type of food which is available at the time. Should the delicacy of the moment be a drifting hatch of duns, then you will find your fish in line with one of the currents that furnish a greater proportion of the duns. Should the food consist of land insects, such as a hatch of flying ants or a succession of wind-blown grasshoppers, you will find the fish next to the more favorable bank. Oak worms, hanging from their gossamer threads, bring the fish directly under the trees and bushes where the worms have made their homes.

Not infrequently, however, an abnormal increase in the food supply may completely wreck the fishing. Migrations of minnows or small school fish will often have the bass in a lake so completely gorged with food that they have no interest whatever in artificials. The rule of food supply may work for or against you, and it is up to you to find the answer.

It has long been the general belief that fish bite best on rainy days. Without doubt, this is true, at least in part. Where a belief of this sort continues down through the years, it must have behind it a certain basis of fact; otherwise it would soon be forgotten. Frequently, I find that it adds to the pleasure I get out of angling to analyze the reasons surrounding a belief of this sort.

Summer rains, as distinguished from downpours commonly known as cloudbursts, which are apt to bring on harmful floods, are beneficial for several reasons. They freshen the lakes and streams with an extra supply of well-aërated water. They create an opaque screen at the surface that enables the fish to move without exposing themselves

to their natural enemies. They help in restoring water levels to normal. They tend to set adrift an extra supply of food. Last, but not least, they lower the water temperature. This lowering of temperature, in addition to its direct beneficial effect, steps up the absorption capacity of the water so that it can take on an extra supply of oxygen from the aërated rain drops and the increased riffle flow in the streams and wave action in the lakes. This increase in oxygen supply has a stimulating effect on the fish. All of these changes that are brought about by summer rains tend to increase feeding activity on the part of the fish and therefore better fishing may be expected; but the analysis does not stop there.

The approach of a summer storm is generally accompanied by a definite drop in barometric pressure. This is nature's warning to the fish that trouble is brewing and usually results in a concentration of fish in the deeper pools. With the arrival of the rain, the barometer will usually level off or start the upward trend that accompanies clearing weather. With the barometric situation favorable, coupled with the other promptings of nature that whet the appetites of the fish, it is small wonder that the farmer boy has learned that a rainy day is a good time for him to take his cane pole and a can of bait and fish in the deep waters of his pet pool. At such times he may expect to find a ready supply of hungry fish, and getting a mess of fish for supper is a simple matter.

Conversely, however, summer rain benefits the fly fisherman only in its after effects. At the time the rain arrives, the fish are generally in the deeper water, and he may better spend his time indoors than

take a useless wetting. His harvest will come later, after the fish have redistributed themselves in their feeding stations.

It has never seemed possible to me to lay down any definite rules regarding thunderstorms. All of us, I am sure, have had some excellent fishing before, during, or after a thunderstorm. Yet the belief persists that thunder will spoil the fishing. It seems to me that the behavior of the fish at these times is governed largely by the behavior of the barometer. Rarely will you find the glass acting twice in the same way during one of these storms, and to attempt to lay down hard and fast rules regarding the behavior of fish under such variable circumstances would indeed be a problem. Here is another opportunity to turn conjecture loose; but I warn you, beware of any conclusions which you may reach, as the very next storm may upset all your theories.

Earlier in this chapter I mentioned the very common belief that wind is generally an important factor to consider in determining the probabilities for a day's fishing. The rule of thumb concerning wind directions has been set up in a poem of sorts which appears at the beginning of this chapter. This rule is considered by many to be on a par with the Gospel and the United States Constitution—an ever-present aid in determining the important question of to go or not to go fishing. Here again we have a belief that has persisted down through the years. Just for the fun of the thing, let's take this little doggerel apart and see what makes it tick.

The first line is easy, "Wind in the east—fish bite least." We know that an east wind is the forerunner of heavy weather. Also,

this rough weather is forecast for us by an accompanying drop in barometric trend. Hence, bad fishing.

"Wind in the west—fish bite best." Clearing weather and a rising glass might well be the interpretation of this line. We have already seen the beneficial effects of such conditions.

"When the wind is in the north." Here the temperature question is apt to come in. Air temperature that is cooler than water temperature is pretty sure to result in poor fishing. Also, a north wind usually is a strong wind that frequently swings eastward and in the direction of rough weather. Naturally, you would not expect good fishing under such conditions.

"When the wind is in the south." A south wind nearly always is a warm wind. It blows gently and is usually accompanied by fair weather and a steady glass. Result: good fishing.

It has never seemed to me that wind, of itself, has any serious direct effect on the fishing, one way or the other. To be sure, a breeze of gale proportions tends to drive the fish into deep water. I say "tends" because this is not always true. Many times I have had excellent fishing over comparatively shallow bars while the wind was blowing so hard that handling the boat was a serious problem. One day on the Pigeon River, Ontario, I took seven musky and hooked and lost as many more in a wind that whipped the lake into a frenzy of dancing white caps. Many men prefer a "riffle on the water" to reduce visibility when they are fishing. If I could have my way about it, I would eliminate wind entirely from my days in the open. It makes casting difficult and spoils my disposition. Other than that,

however, I have never found that it had any serious or consistent direct effect.

During recent years the effects of fluctuations in atmospheric pressure upon the behavior of fish have come in for intensive study by several groups in various parts of the country. The result of this research has been merely to corroborate the more or less general knowledge that fishing and the glass go hand in hand. Unsteady weather, with a wavering or falling barometer, makes for poor fishing; static weather conditions, with a stationary or a rising glass, usually will be accompanied by good fishing. Bear in mind, in applying the barometer to your angling, that the *trend* of the glass is the important thing to observe. Good fishing may be had either at high or low pressures, providing the glass remains at a constant level. Slight downward fluctuations, however, will usually ruin the fishing completely.

People intimately associated with the out-of-doors—naturalists, mariners, woodsmen, guides, and the like—have for generations been familiar with the effects of barometric pressure on the habits of all wild life. Fishermen on the Grand Banks know that seals, jumping in schools, mean heavy weather in the near future. The absence of bats flitting through the dusk of summer evenings is a warning of coming storms. Sea gulls flying inland carry their message with them. These and countless other manifestations on the part of wild creatures will forecast the weather for us. The market hunters of former days, whose very existence depended upon their intimate knowledge of wild life, needed no barometer to tell them what was to be expected of the weather. The leaves of a tree turning upside down in the

wind, the "rain song" of a robin or a tree toad, the "feel" of the air and the facility with which distant noises could be heard—all these things and many more showed them what they needed to know of the weather. Wind direction was considered by them in terms of barometric fluctuation and not merely as a rule of thumb. It has never seemed necessary to me to carry a barometer with me in my kit as there are so many things in nature that will tell me the story more quickly and accurately than a glance at the glass.

There is one phase of barometric fluctuation which seems to go contrary to the general rule of the effects of barometric trends. Nearly without exception, you will find that a change in the weather will, for the time being at least, have a harmful effect on your fishing. When an existing set of weather conditions undergoes a revision, the result usually is that the fish go off the feed, if not indefinitely, at least for a short while until the new set of conditions has had a chance to establish itself.

With all the discussion that has been going on of late concerning the effects of fluctuations in barometric pressure upon the behavior of wild life in general and fish in particular, there has yet to come to my attention a satisfactory explanation of just *why* these things happen. The phenomenon has been attributed to the effects of pressure variation of themselves. It does not seem to me that pressure is the sole contributing factor. Rather, it is more in the nature of a catalyzing agent upon which the absolute cause of this well-established reaction depends in order to make itself felt.

Suppose, by way of illustration, that we consider the possible

effect of a change of barometric pressure upon a trout that maintains its resting station near the bottom of a pool five feet in depth. The barometer, for purposes of discussion, has fallen one full inch in the glass. To compensate for this change in pressure, all that the trout need do is to alter its position in the pool a distance of 1.1333 feet and it is even with game again. Consider next to just what extent a fluctuation of 1/100 of an inch will affect this fish. An alteration in its depth of less than ⅛ of an inch will more than compensate for this fluctuation of barometric pressure. Yet I have seen, not once but many times, a barometric fluctuation of one or two one-hundredths of an inch downward completely ruin the fishing for the day. When you consider that wave motion at the surface of this pool, caused either by wind or the flow of the current, will produce a continual fluctuation, alternately upward and downward, equivalent to as much as a quarter or a half an inch in the glass, it seems most unlikely that minor changes in barometric pressure would be felt at all.

Now, suppose this trout decides to rise through the five feet of water of the pool to take a fly from the surface. As it makes the journey to the surface and back, the pressure on its sides undergoes a change of 2.16 pounds per square inch of surface—more than one-fifth of an atmosphere or better than five inches of barometric fluctuation. It hardly seems likely that we can look to pressure, of itself, to give us the final answer to the problem. Here, then, is ample opportunity to turn conjecture loose and see what develops.

Chapter 15. THE SOLUNAR THEORY

UNQUESTIONABLY, the phases of the moon affect the lives and habits of all living things. The extent to which the moon's influence is felt depends upon the order of development of the individual, be it insect, bird, animal, or fish. It is difficult, however, to lay down hard and fast rules regarding the effects of the moon upon the feeding habits of fish. Too many other factors enter into the problem to permit anything other than generalities.

Anglers have learned that fish are usually more active during the dark of the moon (the new moon) and the first quarter, and that they are less active during the full moon and the third quarter. Many anglers of the Middle West believe that the best night fishing is to be had during the full moon and the best daytime fishing during the dark of the moon. Most salt-water anglers agree with this belief. Another rule of the moon's effects, used mainly by salt-water anglers, has to do with the apogee and perigee phases of the moon. Fishing is presumed to be at its best when the moon is "in perigee" (at the point of its orbit which is closest to the earth). The fish are supposed to be least active when the moon is "in apogee" (farthest away from the earth). For generations, hunters and fishermen in many of the Southern states have considered that the time of "south moon under" (the time of the moon's transit on the opposite side of the globe

during the dark of the moon) marks the period of outstanding activity among the creatures of the wild.

While all of these beliefs have considerable truth in them, they cannot be accepted as absolute rules of behavior. The very fact that there are four or five of these rules is in itself ample testimony that none of them is infallible. None the less, they are of sufficient importance to warrant some thought on the part of the angler with an inquiring mind. The fact that most of the record catches are taken during the sunlight hours of the days at the time of the new moon is evidence enough to show that they deserve some study. Fishing calendars which indicate the best days for fishing of each month are formulated according to one or more of these rules of the moon. The next time one of these comes to hand, just for the fun of it, get your almanac and find out to what school of thought the author of that calendar belongs.

Since Biblical times and, no doubt, before, salt-water anglers have been planning their fishing trips according to the stages of the tides. Here again, however, we find inconsistencies. In the various better-known bays, estuaries, and passes along the coastlines of Long Island and New Jersey, there are only a few spots where the same stage of tide marks the best time for fishing. It seems to me that if a certain stage of tide indicates the best time for fishing at Morriches Bay, that rule should apply also at, say, Montauk Point. Such, however, is not the case.

Years ago I learned from a Florida guide that the market hunters and fishermen of Florida and Georgia planned their daily—and nightly

—excursions according to "moon up" and "moon down." In other words, they had learned from long experience that fish would feed and game would be on the move when the moon was directly overhead or directly underneath. He told me that he had been taught these things by his "grandpappy" when he was a kid in Georgia and that he had been applying this system to his fishing and shooting ever since. To prove his point, he showed me some of the best bass fishing I ever hope to see right under a hot July sun *at high noon.* Like most fishermen, I had always been under the impression that the best fishing was to be had early in the morning or just after sundown. Thinking back over past years, however, I could remember some days when I had found very excellent fishing at odd hours during the day. It seemed to me that this "moon up" and "moon down" idea might possibly be the key to these odd-hour periods of good fishing. Surely the experience of my guide pointed in that direction.

For the next year or so I kept a careful watch of moon positions every time I went fishing. I found that the system worked quite well for several days of each month. Then the schedule would go awry and would not return to normal for about ten days. This happened with such regularity that I concluded that the moon, of itself, could not be the complete answer. Finally, through devious methods of reasoning, the thought came to me that there might be some connecting link between the feeding cycles of fresh-water fish and their cousins the salt-water fish.

The general belief of salt-water anglers is that the tides bring food to the fish and thus arrange the feeding periods. Thinking on the

matter, however, it hardly seemed logical that off-shore schools would find any variation in their food supply because of a change of tide. Finally the idea came to me that there was a possibility that instead of the tides themselves being the contributing factor, the *cause* or *causes* of the tides might have something to do with it. If this were the case, then it might well be that these same causes would constitute the prompting stimuli behind the odd-hour feeding periods of fresh-water fish.

This involved taking the sun into the calculations, as we know that tides are caused by the combined gravitational pull of sun and moon. Equipped with tide tables and a Nautical Almanac, I made up a tentative schedule of feeding periods. This schedule proved to be much more accurate than the "moon up, moon down" method, but it still was far from perfect. Finally, by discarding the tide tables and doing my own calculation of the actuating force by charting the resultant of the solar and lunar forces as applied to the earth, I found that the schedule could be made fairly accurate. In so doing, the name "Solunar" was coined—purely as a convenient term for describing the force in question. Thus was the Solunar Theory born.

When the Solunar Theory was first made public, the sportsmen of the country naturally were curious as to its value. The result was an influx of letters, all requesting information and Solunar schedules. In self-defense, the Solunar Tables were published in 1935 and have been published each year since then.

For the business in hand, however, we are not particularly interested in how the Solunar Theory came into existence. It is more im-

portant to learn just how it affects our fishing. Ample experimental work has been done to assure us that the daily Solunar periods *do* have their effects on the seemingly inconsistent behavior of the fish, and it is this variation in behavior that enables us to plan our fishing so that we may take advantage of what nature has provided for us.

It is an interesting experience to watch the arrival of a Solunar period in a trout stream. Some years ago, a friend and I were spending the weekend at one of the anglers' boarding houses on the lower Beaverkill. The day being warm, we decided to have our lunch on the veranda. As we ate, our host questioned me about the Solunar Theory. Being a man of decided opinions and with little or no hesitancy over expressing them, he stated quite frankly that he was of the opinion that the whole idea was so much poppycock. Trout fed in the early morning and the late evening. If there happened to be a hatch of insects drifting, they might feed during the day, but that didn't happen very often or with any evident regularity. How could I say that things were otherwise when every fisherman knew better than to believe a story like that?

It so happens that this boarding house is located directly opposite a large pool in the Beaverkill, and from the veranda we had an excellent view of the water. The sun was shining brightly and every movement or ripple on the surface of the pool sent out a sparkle of reflected light. Before answering him, I looked at my watch.

"In twenty minutes," I told him, "a Solunar period is scheduled to arrive. Take a look at the pool over there—not a fish feeding. Just for fun, let's sit here and watch what happens."

"O.K.," he answered, "but we won't see much. I've watched that pool a lot in my time and I know that it's quiet during the daytime. Come evening, now, then the fish start to feed."

"Anyway," I answered, "let's see what happens. Meanwhile, how about another cup of that good coffee of yours?"

While we finished our lunch we watched the surface of the pool. Minutes passed and nothing happened. Finally a small fish broke water near the far bank.

"Humph," said our host, "a chub."

As though that were a signal, another fish broke water. Then another and another. Near the other shore a fairly large trout took a drifting fly, leaving a convincing swirl behind him. No longer was it possible to single out individuals—the whole pool had come alive and trout were feeding actively throughout its entire length. Without comment, I showed our host my watch; the Solunar period had arrived only five minutes before. Gathering up our tackle, we made our way toward the river, leaving him scratching his head thoughtfully while some of his ideas underwent revision.

As might be expected during fourteen years of observation, I have seen some strange evidences of the effects of Solunar influence. Trout, normally shy and unwilling to expose themselves to possible danger, have cruised about my legs while I stood under a bright mid-day sun at the tail of a shallow flat. So long as my movements were slow and deliberate, they paid little attention to me and fed actively on what they could find drifting on the surface. Full-grown bass, large enough and old enough to know better, have taken lures at the surface

within a few feet of the boat. It is a common sight to see them chasing minnows in the shallow water during their odd-hour periods, and the presence of an angler wading in the stream near them disturbs them but little. By far the largest brown trout I ever saw in the Delaware—a fish that must have weighed better than ten pounds—fed freely for over half an hour on a bright May morning in water hardly deep enough to cover him, and for a few minutes he rested within ten feet of me in water that barely reached the tops of my wading brogues. I marked the stones beside which he lay and measured his length after he had moved away. Even after allowing for possible error, I found he was a little over three feet in length.

It is a good plan, when fishing during Solunar periods, to use lures that play on or near the surface. Fish are cruising at these times and are not usually found in the deeper waters. Thus, a bait or a sinking lure fished near the bottom of the deep pools is not generally as productive as one that is fished on top, where it will attract some attention.

An outstanding example of the effectiveness of surface lures during Solunar periods happened one day when two of us were fishing for bass in the Upper Delaware. We were both fishing with bucktails, allowing them to sink two or three feet below the surface during the retrieve. In a pool that I knew held plenty of bass, neither of us had a strike for the first fifteen or twenty minutes of the Solunar period. Deciding that something was wrong, I made my way to the head of the pool again and tied on a floating bass bug instead of the bucktail. My friend continued to use the underwater lure. At once I

began to take fish. There were no short strikes and sub-surface swirls that often accompany bass bug fishing. Each fish took the lure with a solid, smashing strike and was well hooked. Fishing in water that had just been thoroughly covered by my friend's bucktail, I took twenty-two bass. Three of these fish weighed around three pounds each and were placed in the creel while the rest were returned to the water.

If you watch the schedule closely, you will find that the more prolific insect hatches on a trout stream occur during Solunar periods. I have never seen the fish fail to feed on a hatch that developed during a Solunar period. To be sure, hatches will come at other times, but these are not usually as plentiful as the ones that develop during the activity periods. Frequently the trout will completely ignore a hatch that comes between feeding periods. If they do feed on one of these "in between" hatches, they are usually so selective that it often is exceedingly difficult to find an artificial fly that will interest them.

Muskellunge and great northern pike will respond to Solunar periods as well as trout and bass. In one day on the Pigeon River, Ontario, I managed to hook fourteen musky. I fished all day long and my guide took me only to the choicest water. In spite of his predictions, however, the fourteen fish, without a single exception, were hooked during Solunar periods. In my files is the record of a catch of seventeen musky, all taken at mid-day during a Solunar period. No fish were taken by those two anglers either before or after the Solunar period, although they fished throughout the entire day.

There is an old saying that "none are so blind as those who

will not see." Unfortunately, too many anglers are afflicted with this fault. The result is that these men systematically miss the best fishing of the year season after season. So many times I hear them say, "Yes, I suppose the Solunar Theory does work all right, but when I go fishing I just go fishing. If the fish want to rise—all right. If not, I'm having a good time anyway. If the fish aren't going to bite, I'd rather not know about it. It would spoil my fun."

To me, that viewpoint just doesn't begin to make sense. Part of the fun that I get out of fishing comes from analyzing conditions and learning what I can about fish and their habits. To enjoy a thing thoroughly is to understand it thoroughly. Thus, to close your eyes to an obvious part of your sport is, to my way of thinking, a good way to curtail much of the pleasure that you can derive from that sport. It sounds very much like one of the stock sayings I used to hear when I was a boy and the automobile was more or less of a novelty. "Well, I suppose an auto is all right if you like 'em," the graybeards used to state with an air of great wisdom and condescension. "I'll stick to the good old horse and buggy and be sure that I get where I'm going."

It is impossible for me to see eye to eye with these unbelievers, just as the early automobile manufacturers must have deplored the horse-and-buggy viewpoint. Disregard of existing conditions seems distinctly shortsighted.

We know that Solunar influence is at its maximum intensity during the dark of the moon when the earth, moon, and sun are approximately in line, with the moon between the earth and the sun.

Naturally, the Solunar periods at that time of the month come at noon and at midnight. Year after year, fishermen who are on the job continue to take phenomenal catches at these times, and without doubt the best fishing of the month is to be expected during that three-day period of the dark of the moon. Yet the rank and file of the anglers—the horse-and-buggy boys—continue to knock off about eleven o'clock and loll around in the shade, eat lunch, repair tackle, take a nap, and so on, and begin fishing again at mid-afternoon, thereby passing up the choice fishing of the year. If that is getting the most out of the sport, then my ideas must be exceedingly warped and I should see a psychiatrist forthwith.

It wasn't so long ago that we had with us that strange creature known as the "dry-fly purist." The members of this vanishing race made their boasts that they "would take them dry or not at all." Generally they did the latter, and their creed proved to be a great boon to conservation. Perhaps the horse-and-buggy boys are somewhat in the same class, at least I like to think so. At all events, so long as they persist in ignoring those dark-of-the-moon Solunar periods, there will be many more fish in our waters than would otherwise be there. Perhaps I should not be so severe with them, after all. For my own part, however, a copy of the Solunar Tables will continue to be an integral portion of my angling kit.

Chapter 16. CONCLUSION

ALTHOUGH the suggestion has already been made, it is well worth repeating that too much cannot be learned about your favorite trout water. There are many hours of most days on the streams when the fish are quiet and casting becomes somewhat of a chore after an extended period of feeding inactivity. These quiet periods can be put to excellent advantage in other ways. Learn, if you can, what kind of cover there is at the bottom of some of your favorite dry-fly "runs." Find out what banks are undercut, so that you will know whether to drift your fly directly against the bank or a little distance out from it. These odd items of information come in mighty handy sooner or later.

Where it is possible, find out just where the trout in various sections of the stream have their resting stations and their feeding stations. To illustrate, there is a certain point of land that juts out into one of the Brodhead pools. A large tree grows on the point and the river has cut away the bank under the tree, leaving the roots bare. Naturally, there is always at least one better-than-average trout living under that point. As soon as one trout is caught out, another moves in. Since one and all adopt the same feeding habits, my knowledge of how to fish that point has stood me in good stead. To approach from below and drift a fly past the point has availed me nothing. Finally, I learned that each fish takes up his resting station well back among

the roots, so that although he has a clear view of what the current may bring him from directly upstream, he cannot see a fly that alights beside the point. Thus, by taking my stand at the side and slightly above the point, I can drift a fly right down to him. But that is not all. About twenty feet above this point are a shoal and a tiny riffle. During the rest periods, this water is empty of fish. As soon, however, as a hatch begins to develop, the trout under the point moves out and up to a position in the shallow water directly under this little riffle. A fly that is drifted down to the point when the fish has taken his feeding position is not even seen, much less taken. Just to be sure, I always cast to the foot of the little riffle first before wasting time at the point. Over a period of years this single item of information has brought me many fine trout that I might otherwise not have had.

When the stream is quiet, it is always interesting and instructive to study currents and "lines of drift." Study each pool carefully and learn how the currents behave, then you will know how to place your fly most advantageously when the fish are feeding. Frequently a wide section of a pool, or run, is entirely empty of fish merely because it is not fed by a suitable "line of drift." Of course, when the active duns are on the water they are apt to alight anywhere, and drift is not then of such paramount importance. When, however, the fish are feeding on duns that are weary after their nuptial flight or, in the extreme case, when "spent spinners" are drifting, then the "lines of drift" must be recognized to ensure best results.

Many times during the quiet periods, I stand my rod upright in a

bush on the bank and investigate the shallow riffles. The best way, if you are wearing high waders, is to sit right down in the stream so that you can be comfortable. There are many things to be learned by turning over the stones in the fast, shallow water. You will soon learn to recognize the various types of nymphs on the bottoms of the stones. Break open one or two of the caddis cases and find out what color the caddis worms have. They range from light buff to brilliant green. Dig down in the loose gravel and see if you can find any of the burrowing nymphs. You have to be quick, as these little fellows can move pretty fast. A half-hour thus spent will not only tell you what nymphs are most plentiful but will familiarize you with the more common ones peculiar to your stream, so that you will soon be able to diagnose a hatch by a quick inspection of the empty drifting nymph cases.

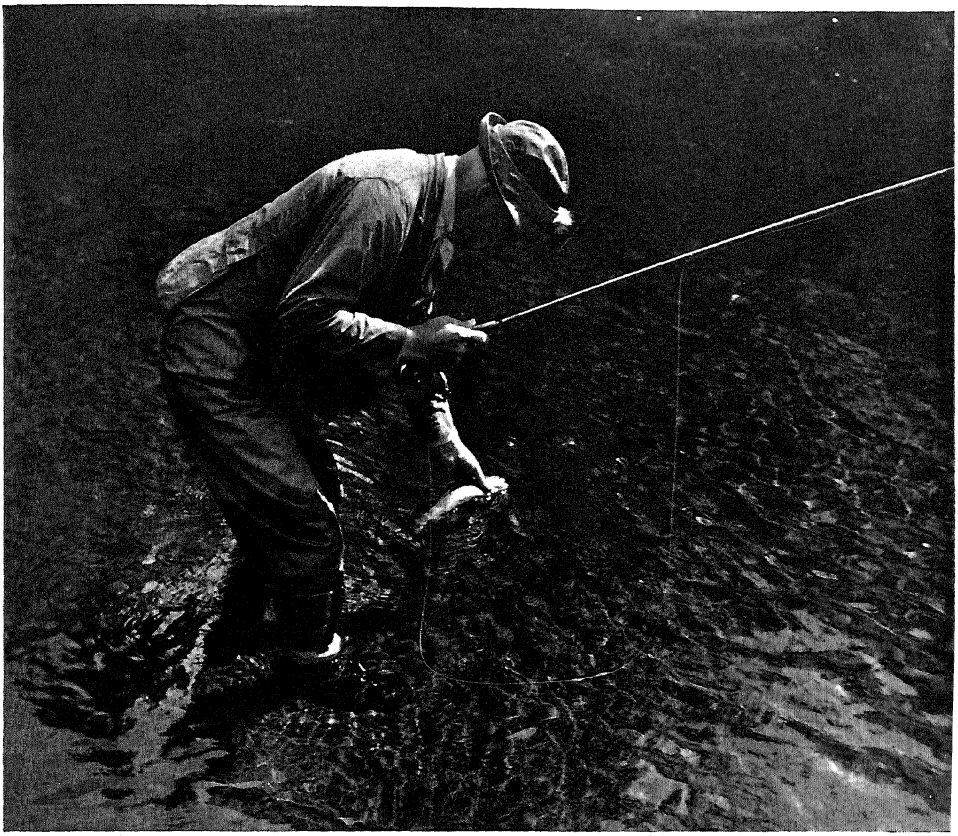
It is always profitable to take a few minutes out of your actual fishing time to investigate an active hatch. The drifting nymph cases and the flying duns can then be linked together in your mind. It doesn't take long and the information is useful.

The old saying "haste makes waste" certainly holds good on a trout stream. Hasty wading is damaging to your fishing. Hurried, careless casting is just about as bad. It is always much wiser to take your time, move quietly, and keep your eyes open.

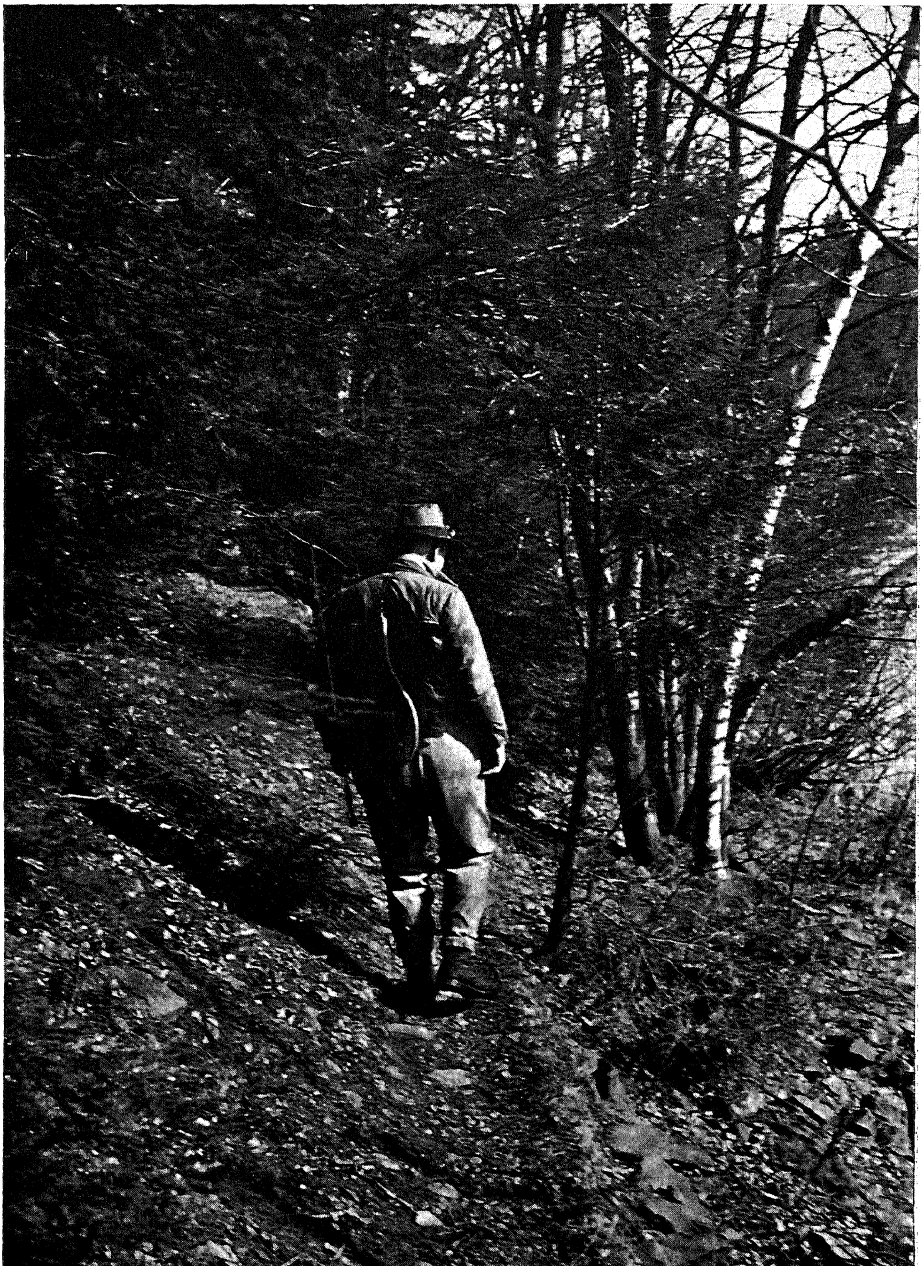
One of the most pleasant things about a trout stream is the amount of activity among wild life that seems to concentrate about it. Frequently I spend an hour or so sitting quietly on the bank and watching what goes on about me. One hot July afternoon, I spent nearly two hours on the bank of the lower Brodhead watching two large

lamprey eels build their spawning bed in the shallows directly below me. The gentleman was a willing worker at first. He carried fairly large stones about in his mouth and placed them on the pile behind the spawning bed. His efforts, however, were not appreciated and his lady friend reallocated every single stone that he had placed. She evidently was of the opinion, so common among her sex, that men don't know much about housekeeping. Finally the old boy gave up in disgust, fastened himself to a stone, and took a nap right in the middle of the spawning bed while she finished the job by herself. Time wasted? Possibly. But my patience was rewarded by my being an eye-witness of the spawning operation itself. I watched the eggs being deposited and fertilized and I found the entire process interesting enough to warrant the loss of two hours of fishing.

Another day, while I was resting on the bank beside a pool, I gleaned an item of information that I had been wanting for several years. At the foot of that pool lies an uprooted tree. It lies on its side with the roots facing upstream and the water about these roots is about five feet deep. I had always imagined that a large trout lived under those roots, but I had never been sure. On this afternoon, as I lazed on the bank, my eye caught a movement in the deep water at the base of the fallen tree. Sure enough—there he was. And what a trout! While I watched, he swam slowly out of his home under the tree and passed within seven or eight feet of me. Unfortunately he did not stop and allow me to mark his length on the stones of the bottom, to be measured later. But what I saw gave me thrill enough—six pounds if he weighed an ounce. His big, undershot jaw protruded



DON'T KEEP MORE THAN YOU CAN USE



out from his snout and the spots on his side as he passed me looked as big as ten-cent pieces. Many long hours have I spent trying to interest that big fish in one of my lures, but he still lives under the tree. Perhaps next season I shall have the good fortune to find him in a feeding mood.

Not all my vigils have been so unproductive, however. On another day, by a different pool, I was surprised to see a fairly able trout appear from under a ledge of rock, rise slowly to the surface in the brilliant sunlight, and take a tiny fly that seemed hardly large enough to be worth the effort. Without changing my position, I flicked a dry fly so that it followed the same line of drift. Up came the trout again in the same leisurely fashion; he sucked in my fly and turned back toward his ledge again when I raised the rod and tightened. My pocket scales placed him at just under two pounds before I put him in my creel.

As the seasons pass and I find the years overtaking me in much too rapid succession, I get less and less pleasure out of killing many fish. For a thoroughly delightful day, I can ask for nothing better than the good fortune to find three or four steadily feeding trout that are not particularly interested in sampling artificial flies. A trout that is feeding to an established hatch so that he is selective in his diet constitutes a challenge that should not be denied. Little can be learned from a fish that takes a fly on the first cast. The fish that refuse your casual offerings are the ones that test your ingenuity. Not that I can take them all—far from it. But I mightily enjoy trying.

To one who can look back to the days when our streams were

filled with natural, stream-reared trout and when it was unthinkable to fish within a hundred yards of another angler, the low state to which our present-day angling has fallen is quite disturbing. No longer can one enter a pool in our public waters with the assurance that the pool is his and his alone until he has finished with it. Stream etiquette is just about as unknown these days as is politeness on our highways. In spite of what the others are doing, however, I still try to observe the rules as I learned them. If a man is fishing a pool, I leave the pool to him and go on to the next, or the next, or the one after that, until I can find one that is not occupied. It seems to me to be almost as discourteous to seat yourself on the bank and watch another man fish. Most men prefer to fish alone. Why, then, intrude upon this well-known desire for solitude? Beyond passing the time of day or a casual "What luck?", I make it a point to mind my own business when I'm fishing and hope that the other fellow will mind his and not bother me. If more men would stick to these simple rules, fishing today would be more pleasant than it is.

In closing, let me remind you once more that pride goeth before a fall. Guard yourself always against the assumption, unconscious or otherwise, that you have *learned angling*. Only with the realization of how little not only you but all of us know of angling will come the possibility that someday you may become a finished angler. Angling is a complex sport—more so than most; but in its very complexity lies its charm. Count that day lost whose setting sun finds you lacking some new and useful item of angling lore gleaned from your day's experience. Always I try to keep in mind the words of a farmer I

chanced to meet on one of my excursions. We had stopped to chat for a moment and our talk led, quite naturally, to the vagaries of fish and fishermen. We agreed that there is a lot to learn and that observation is the key to that learning. He summed it up like this:

"Most folks," he said, "just look at things. Only a few *see* 'em."

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